NATIONAL PUBLICATION FOR BUYING-USING-SELLING COMPUTER HARDWARE & SOFTWARE

COMPUTER SHOPPER™

JANUARY 1986
VOL. 6 NO. 1
ISSUE 72
$2.25
CC 02927

MONEY SAVING ADS & ARTICLES

PAPER 126

Epson's New Equity Series —

a complete range of MSDOS compatibility

In This Issue...

- *Universal Sorting Modules for BASIC Programs*
- *More Jackintosh Adventures*
- *"Hands On," Guided Tour of an Amiga*
- *Riddle of The Sphinx by Les Solomon*

Don't Risk The Unknown
Brand Name Diskettes at the Lowest Prices!
Disk World! See Ad Index!

BUY DIRECT...AND SAVE!
1 800 USA-FLEX

THE WORLD'S LARGEST COMPUTER MAIL ORDER FIRM
CONROY-LA POINTE
Formerly Computer Exchange™
See Ad Index

America's Mailorder Headquarters
Lyco Computer
World's Leader in Sales and Service
See Pages 16 & 17

Complete IBM XT Compatible System $1799
Computer • Monitor • Floppy Drive • 10 Mb Hard Drive • Much More
MW MidWest Micro-Peripherals
1-800-423-8215
Money-Back Satisfaction Guarantee
INSIDE FRONT COVER

256K $2.47 Qty one 11/25/85 **D-RAM**
High Quality 150ns Parts
Microprocessors Unlimited, Inc.
(918) 267-4961
See Ad Index

10mb ½ Height 245.
20 mb Hi Speed 369.
30mb Hi Speed 899.
4164K 79¢
256K 1.99
American Semiconductor
1-800-237-5758

39¢ Diskettes
See ad index for full page ad
Communications Electronics Inc. 800-USA-DISK

RAM 64K 256K QTY. 300 EA. $.69! 2.18!
CALL NOW! PROTO PC INC. (612)644-4660 PLEASE SEE AD INDEX

Premium Quality! 100% Error Free! Lifetime Warranty!
DISKS For Apple SS/DD-40tk from 33¢ DS/DD from 46¢ from 54¢
UNITECH (800)343-0472 IN MASS (617)"UNI-TECH" see ad index

See Advertiser's Index Page 6

0 71486 02927 0

ATARI

More Jackintosh Adventures

by Fred Hatfield

Bitmap Memory Dumps

Dumping Jackintosh's memory is one way to find out about the system operation. However, the 520ST is a "new" type of computer -- considerably different from what has gone before. Instead of being "text" oriented, the Jackintosh is part of a breed known as "bit-mapped". "Bit-mapped" is a fancy way of saying that the screen display is controlled by individual pixels with representation in memory. In other words, for every pixel on the screen display, there is a corresponding bit in memory that can be "on" or "off." (For simplicity, we'll skip the color concept at the moment.)

If you think about it, that means that any text to be displayed has to be represented by such "bit patterns" in memory, i.e., the letters A, B, C, E, etc. Each will have to be stored in memory and moved to the screen display area as needed. This also means that if you know where the bit patterns are stored, it would be possible to substitute another "typeface" for the existing one. In fact, it would be possible to have a number of substitute typefaces that you could select at will.

Here are two programs that will display bitmap patterns on an EPSON printer. The first one (IDUMP for "Icon Dump") (on page 143) will display sequential memory locations so that you can locate icons. The second program (FDUMP for "Font Dump") (on page 58) will display "interlaced" memory strips to show you the construction of a font. "Interlaced memory strips" will be explained later in this article.

Icon See You're Interested

IDUMP has it's count controls set for a 32x32 bitmap matrix. This is the most

continued on page 58

Atari Help

by Jeff Brenner

Q. The August 1984 issue of *Computer Shopper* included a program for alphabetizing words and then storing and retrieving these words. This program has turned out to be very handy. Is there a way to delete words from the alphabetized list?

John M. Hirsch
Normal, IL

A. There are two easy ways to delete an entry from an alphabetized list. Consider the following string, which represents five words A, B, C, D and E;

WORDS$ = "ABCDE"

Each "word" has its own position in the string; "A" is in position 1, "B" is in position 2, and so forth. Deleting an entry is then a simple matter if you are familiar with the way Atari BASIC handles strings. If you wanted to delete the "B" entry above, for example, the following command would do the trick:

```
LET
WORDS$(2) = WORDS$(3,5)
```

This tells the computer to place in position 2 (where the "B" resides) the entries in positions 3 through 5. Thus, WORDS$ now contains:

"ACDE"

The "B" has been deleted.

A similar procedure can be used to delete an entry in August's alphabetizing program. For example, to delete entry number X, use the following:

```
LET WORDS$(X*20-19) =
WORDS$(X*20+1,LEN(WORDS$)).
```

A more creative technique for deleting an entry in an alphabetized list is to assign the entry to be deleted a string such as "ZZZZZZZZZZ." When the words are realphabetized, the entry with the Z's will be sorted to the bottom of the list where it can be conveniently ignored or discarded.

Q. I am interested in finding any information concerning the ability of expanding the memory on my 800XL Atari. It would be greatly appreciated if you could tell me if this is possible and, if so, who I may purchase these components from to further the use of my system.

Andrew Leo Eddings
Alabaster, AL

A. Over a year ago I recall that Axlon and one other company had been manufacturing a 128K memory expansion for the 800 (although this would not necessarily be compatible with the XL). The extra memory was accessed through bank switching of a 4K address area. I haven't heard anything about it since then, although I can tell you that it would not be compatible with the DOS 2.5 RAMDISK for the 130XE. If any readers produce or know of a 128K memory expansion currently available for the 800XL. Please write and tell us.

continued on page 148

Applying The Atari

by Jeff Brenner

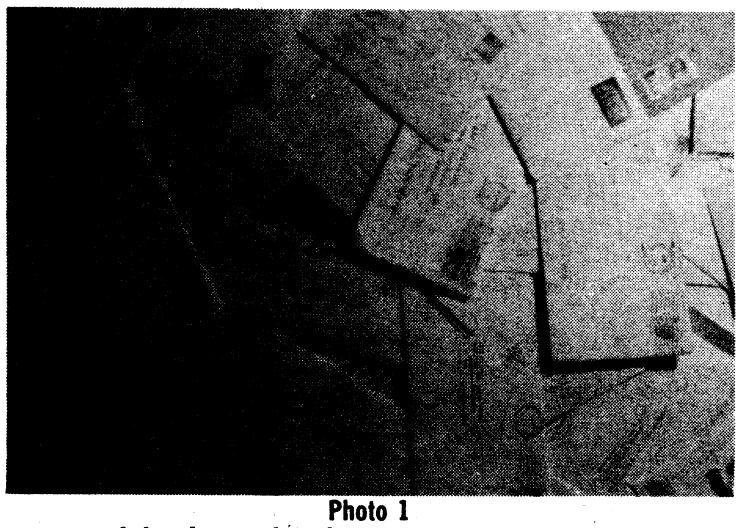


Photo 1

Yes, we've made it to 1986, and what could be a more appropriate way to start the year than with a computerized appointment calendar program? With Pace, the Personal Appointment Calendar & Editor, you'll never have an excuse for missing an appointment again. This month we'll also read some reader mail, look back on 1985, and get a glimpse of some Halley's Comet software available for the Atari.

Retrospect

Surely, 1985 will be remembered for both the Atari ST and the Commodore Amiga, regardless of how well each has sold during this holiday season. As I write this column in November, everybody is talking about the amazing capabilities of the Amiga. Even A.N.A.L.O.G. has acknowledged that many Atari-users consider the Amiga to be the *real* next-generation Atari machine. For those less interested in the Amiga's graphics and sound capabilities, however, most would agree that the Atari 520ST offers comparable performance at a much more affordable price. Maybe everybody should buy *both* machines. Or, how about neither. Many computer-users dislike the notion of upgrading to a new computer when the industry tells them to; i.e. "now's the time to dump that 8-bit antique and get a Mac-like machine." Many 8-bit Atari owners have put a significant investment in their machines in software and hardware, and are less than thrilled about starting over from scratch with a brand new system.

One thing is for certain, though. The prices for software and hardware for the 8-bit line have dropped considerably. Many Atari users have finally been able to expand to fully-equipped Atari systems with disk drives, modems, and more versatile printers. The lower disk drive prices have made the cassette-based Atari system almost extinct.

Well, by 1986 you'll know the score. I'm still hoping to see a true 32-bit, multi-megabyte machine from Atari--maybe they could add some Amiga-rivaling graphics and sound effects while they're at it. We'll have to wait and see what 1986 brings.

Reader Mail

Q. I purchased the first issue ever of *Computer Shopper* in September and came across your Response Analysis Program (9/85, page 59), which I spent 3 and 1/2 hours typing in. I was intrigued with this program and looked forward to demonstrating it to friends and relatives to show that computers can be programmed to simulate artificial intelligence.

After keying it in, it did not work properly. Enclosed I give you a printout showing an example of the responses I get. The program only responds with the statements contained in the last few lines, i.e. 5580 to 5587. It does not pick up on the key words the way it is supposed to. Any suggestions?

H. G. Hittenberg
Toronto, Ont. Canada

A. The printout that H.G. Wittenberg sent me was quite humorous and a portion of it follows:

```
>I WANT TO TALK ABOUT
WORK
RAP: EXPLAIN FURTHER

>WORK - YOU KNOW -
WHERE ONE GOES TO
EARN MONEY
RAP: AND WHAT DO YOU
THINK ABOUT THAT?

>I THINK WORK IS
NECESSARY AND
ENOBLING
RAP: I DON'T
UNDERSTAND

>WELL, YOU ARE NOT
PICKING UP THE KEY
WORD WORK!
RAP: WHAT ELSE SHOULD
I KNOW?
```

continued on page 58

Applying The Atari continued from page 57

>YOU ARE MAKING ME ANGRY
RAP: YOU SEEM UNCOMFORTABLE WITH THIS TOPIC!

>NO, I AM ANGRY AND MAD THAT YOU DO NOT PICK UP THE KEY WORDS
RAP: TELL ME MORE.

>LOOK UP DATA STATEMENT IN LINE 1280--THAT'S WHERE YOU FIND ANGRY, MAD
RAP: THAT IS INTERESTING--GO ON.

>YOU ARE SUPPOSED TO COME UP WITH RESPONSE IN LINES 5390-5392!
RAP: LET'S HEAR ALL ABOUT IT!

While it may seem that RAP is putting up a good fight with H. Wittenberg, RAP is answering only with its dummy responses, such as "AND WHAT DO YOU THINK ABOUT THAT?" and "TELL ME MORE."

The Response Analysis Program as listed in the September 1985 column, has been thoroughly tested on an Atari 800, 800XL, and 130XE, and will work perfectly if it has been entered correctly. The cause of H. Wittenberg's problem is most definitely a typing error. However, a TRAP statement in the program makes it difficult to spot errors since a faulty program will still run without error messages; the program is directed to give a dummy response whenever an error occurs in the program. Therefore, readers who are not getting proper responses from RAP, should change the TRAP 1190 on line 650 to a TRAP 40000. This disables the trap command and will let the program stop executing when an error occurs.

The best way to check RAP is to type in some lines from the sample conversation provided on page 59 of September's issue. For example, if you type:

I'M CHECKING TO SEE IF YOU WORK PROPERLY.

RAP should give a response such as:

FOR HOW LONG HAVE YOU BEEN CHECKING TO SEE IF I WORK PROPERLY.

If you enter H. Wittenberg's statement, "I WANT TO TALK ABOUT WORK," a properly entered RAP will respond with a response such as:

DO YOU KNOW MANY PEOPLE WHO ENJOY THEIR JOBS?

As I have stressed in the past, the best insurance against typing errors when entering programs from this column is the Program Perfect utility, which uses the three-letter codes preceding each program line to verify lines as they are entered into the computer. See April's column (1985) for a listing of Program Perfect (the instructions are printed in May's column), or readers can purchase a Program Perfect diskette with documentation (see the end of this article).

Q. Regarding the small print in the manual supplied by Optimized Systems Software for their Basic XE cartridge (and presumably for their other products as well). It seems I, with overworked and less than perfect eyesight, trustingly ordered Basic XE by mail. Now, I have no gripe with the product. A recently published benchmark sort took nine minutes on my 130XE. When I plugged in the Basic XE cartridge, just to see what would happen (since I can't read the tiny print in their manual) the same exact benchmark ran in 3:30 flat. This is clearly a powerful product but, alas, I may never get full use of it, despite having paid full price. Oh, I know I could have gotten a refund. That's not the point. I want everything this product can do for me--the full capability I paid for. So, I wrote a strong gripe on the warranty form when I sent it in. The response from OSS to date has been a big round zilch. Ironically, they have other products I'd like and can afford to buy. Will I? Will you?

I've spent many years in marketing and advertising and there's a moral here. The smart marketers today know that it's not enough merely to make the initial sale of complex hardware, software or firmware products. You must support (and keep on selling) every customer after the sale if you want to build your company. The only practical way to do that for sales that doesn't amount to big bucks is by providing manuals that are practical, understandable and readable. In fact, good manuals are powerful marketing tools for high-tech products. We get them from Synapse, from Datasoft and others. Even the tiny "one guy and a bright idea" operators are putting out documentation that's readable, even if they don't spell too well.

Unfortunately, OSS saw a chance to save a few bucks on printing and paper; a decision that may be good finance but is lousy marketing. It cheats every customer who doesn't have the eyes of an eagle. So, watch yourselves, all nearsighted hackers. Caveat emptor is alive and well in the marketplace.

Roy Hutchins
Rochester, NY

A. I'm well aware of how annoying small print can be, even for those of us with the best eyesight, as I have received numerous letters about the small size of the program listings in this column. I can imagine that this would be even more frustrating when one pays good money for a commercial software product from a respectable company such as Optimized Systems Software. But perhaps an even more serious problem lies with the manufacturers that print manuals that are legible, but make no sense to the average computer user. This is seen frequently in the computer industry with companies that let their programmers and engineers write the manuals, instead of hiring a professional writer. Even worse are the companies that do not provide enough documentation, or none at all. Such was the case for a long time with Atari's XL computers. The machines came with a little booklet that gave instructions for setting up the machine and disk drives--a far cry from the reference manual and BASIC book that were included with my original Atari 800 several years ago. Now Atari is including a much more substantial 130-page booklet and hopefully other companies, such as OSS, will move in this direction, for their own good as well as for their customers'.

RAP Intelligence Expansion

October's (1985) column contained instructions for adding your own keywords and responses to RAP. For those readers who still want to teach RAP some new tricks, I have put together over 30 more keywords and more than 100 additional responses. I don't have space to print it in the column, but the "Intelligence Expan-

continued on page 147

FDUMP Program

```
TO PARSE :A
 MAKE "B .EXAMINE :A
 MAKE "C1 INT (:B / 16)
 MAKE "C2 :B - (16 * :C1)
 BREAKUP :C1
 BREAKUP :C2
END
TO BREAKUP :CX
IF (:CX = 0) [RUN :GR0 GO "Z]
IF (:CX = 1) [RUN :GR1 GO "Z]
IF (:CX = 2) [RUN :GR2 GO "Z]
IF (:CX = 3) [RUN :GR3 GO "Z]
IF (:CX = 4) [RUN :GR4 GO "Z]
IF (:CX = 5) [RUN :GR5 GO "Z]
IF (:CX = 6) [RUN :GR6 GO "Z]
IF (:CX = 7) [RUN :GR7 GO "Z]
IF (:CX = 8) [RUN :GR8 GO "Z]
IF (:CX = 9) [RUN :GR9 GO "Z]
IF (:CX = 10) [RUN :GR10 GO "Z]
IF (:CX = 11) [RUN :GR11 GO "Z]
IF (:CX = 12) [RUN :GR12 GO "Z]
IF (:CX = 13) [RUN :GR13 GO "Z]
IF (:CX = 14) [RUN :GR14 GO "Z]
IF (:CX = 15) [RUN :GR15 GO "Z]
LABEL "Z
END

TO DGR0
 MAKE "GR0 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR1
 MAKE "GR1 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR2
 MAKE "GR2 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR3
 MAKE "GR3 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR4
 MAKE "GR4 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR5
 MAKE "GR5 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR6
 MAKE "GR6 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR7
 MAKE "GR7 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR8
 MAKE "GR8 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR9
 MAKE "GR9 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR10
 MAKE "GR10 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR11
 MAKE "GR11 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR12
 MAKE "GR12 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR13
 MAKE "GR13 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR14
 MAKE "GR14 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR15
 MAKE "GR15 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223]
END

TO INITDMP
 DGR0 DGR1 DGR2 DGR3 DGR4 DGR5 DGR6 DGR7 DGR8
 DGR9 DGR10 DGR11 DGR12 DGR13 DGR14 DGR15
END
                    TO FDUMP :A
                     MAKE "D :A
                     MAKE "LCNT 16
                    LABEL "FD2
                     IF (:LCNT = 0) [GO "FD4]
                     MAKE "CNT 8
                     TYPE :A
                     MAKE "C :A
                    LABEL "ID2
                     IF (:CNT = 0) [GO "ID4]
                     PARSE :A
                     MAKE "CNT :CNT - 1
                     MAKE "A :A + 1
                     GO "ID2
                    LABEL "ID4
                     PRINT [ ]
                     MAKE "A :C + 256
                     MAKE "LCNT :LCNT - 1
                     GO "FD2
                    LABEL "FD4
                     PRINT [ ]
                     MAKE "A :D + 8
                     FDUMP :A
                    END
```

Program continued on page 144

Jackintosh continued from page 57

popular configuration for icons, although not the only one. In my previous efforts of examining memory, I located some of the icons used on the opening display screen. Enter the listing for IDUMP and run it starting at memory location 121370 decimal. The command should resemble the following:

IDUMP 121370

During execution, you will see the file drawer, file folder, trash can, program icon, and data icon. Notice that each icon has a "mask" preceding the icon which is used as a background to prevent the icon from merging with the screen color and "disappearing." Each line on the printout is preceded by it's memory address. The "O" bits are represented by an under (_) for reference purposes. Since this program is only a skeleton, further refinements can be added to make it more useful. For example, instead of using the underline character, you could use a capital "L," which

continued on page 143

Jackintosh
continued from page 58

would give a more definite pixel representation.

The printer representation for a "1" is a filled character cell (decimal 95). Since the proportions on the printer are different than that of the screen, the icons will be extended vertically. This is not a handicap, since it allows more room for referencing individual bits and allows closer examination of bit-mapped techniques.

Bit-Mapping The System Font

The second program, FDUMP is set up to dump the standard 8x16 system font that starts at memory location 101027 decimal. Notice that the font is arranged in memory strips of 16 groups. Each group consists of a "scan line" of 8 bits representing a horizontal portion of a character. If we look at the top scan line in sequence, it would be each 8 bits across the top of the entire ASCII character set. When we reach the end of the first 8 bits of the top line, we return to the next scan line start address, (101027 + 256 = 101283) and there we can scan the next group of 8 bits just below the top line of the previous scan.

Since the paper we print on is only 8" wide, we can't print the entire top line scan of all 256 characters, so we divide it into 8 characters across the page. This means that we will print out the bitmap in sections of 64 bits across by 16 bits high. This works out to give us all 255 characters in sequence in a display that will be sensible and useful. (I hope!).

Note that this is set up for the 8x16 character set. If you wish to dump an 8x8, you will have to modify the program control counts suitably.

Interestingly enough, examination of the print outs show that you could still use only every other line of an 8x16 character set and still have a readable character set.

IDUMP Program

```
TO PARSE :A
 MAKE "B .EXAMINE :A
 MAKE "C1 INT (:B / 16)
 MAKE "C2 :B - (16 * :C1)
 BREAKUP :C1
 BREAKUP :C2
END

TO BREAKUP :CX
IF (:CX = 0) [RUN :GR0 GO "Z]
IF (:CX = 1) [RUN :GR1 GO "Z]
IF (:CX = 2) [RUN :GR2 GO "Z]
IF (:CX = 3) [RUN :GR3 GO "Z]
IF (:CX = 4) [RUN :GR4 GO "Z]
IF (:CX = 5) [RUN :GR5 GO "Z]
IF (:CX = 6) [RUN :GR6 GO "Z]
IF (:CX = 7) [RUN :GR7 GO "Z]
IF (:CX = 8) [RUN :GR8 GO "Z]
IF (:CX = 9) [RUN :GR9 GO "Z]
IF (:CX = 10) [RUN :GR10 GO "Z]
IF (:CX = 11) [RUN :GR11 GO "Z]
IF (:CX = 12) [RUN :GR12 GO "Z]
IF (:CX = 13) [RUN :GR13 GO "Z]
IF (:CX = 14) [RUN :GR14 GO "Z]
IF (:CX = 15) [RUN :GR15 GO "Z]
LABEL "Z
END

TO DGR0
 MAKE "GR0 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR1
 MAKE "GR1 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR2
 MAKE "GR2 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR3
 MAKE "GR3 [TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR4
 MAKE "GR4 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR5
 MAKE "GR5 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR6
 MAKE "GR6 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95]
END
TO DGR7
 MAKE "GR7 [TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR8
 MAKE "GR8 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR9
 MAKE "GR9 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR10
 MAKE "GR10 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR11
 MAKE "GR11 [TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223 TYPE CHAR 223]
END

TO DGR12
 MAKE "GR12 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 95]
END

TO DGR13
 MAKE "GR13 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95 TYPE CHAR 223]
END

TO DGR14
 MAKE "GR14 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 95]
END

TO DGR15
 MAKE "GR15 [TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223 TYPE CHAR 223]
END

TO INITDMP
 DGR0 DGR1 DGR2 DGR3 DGR4 DGR5 DGR6 DGR7 DGR8
 DGR9 DGR10 DGR11 DGR12 DGR13 DGR14 DGR15
END

TO IDUMP :A
 MAKE "CNT 4
 TYPE :A
LABEL "ID2
 IF (:CNT = 0) [GO "ID4]
 PARSE :A
 MAKE "CNT :CNT - 1
 MAKE "A :A + 1
 GO "ID2
LABEL "ID4
 PRINT [ ]
 IDUMP :A
END
```

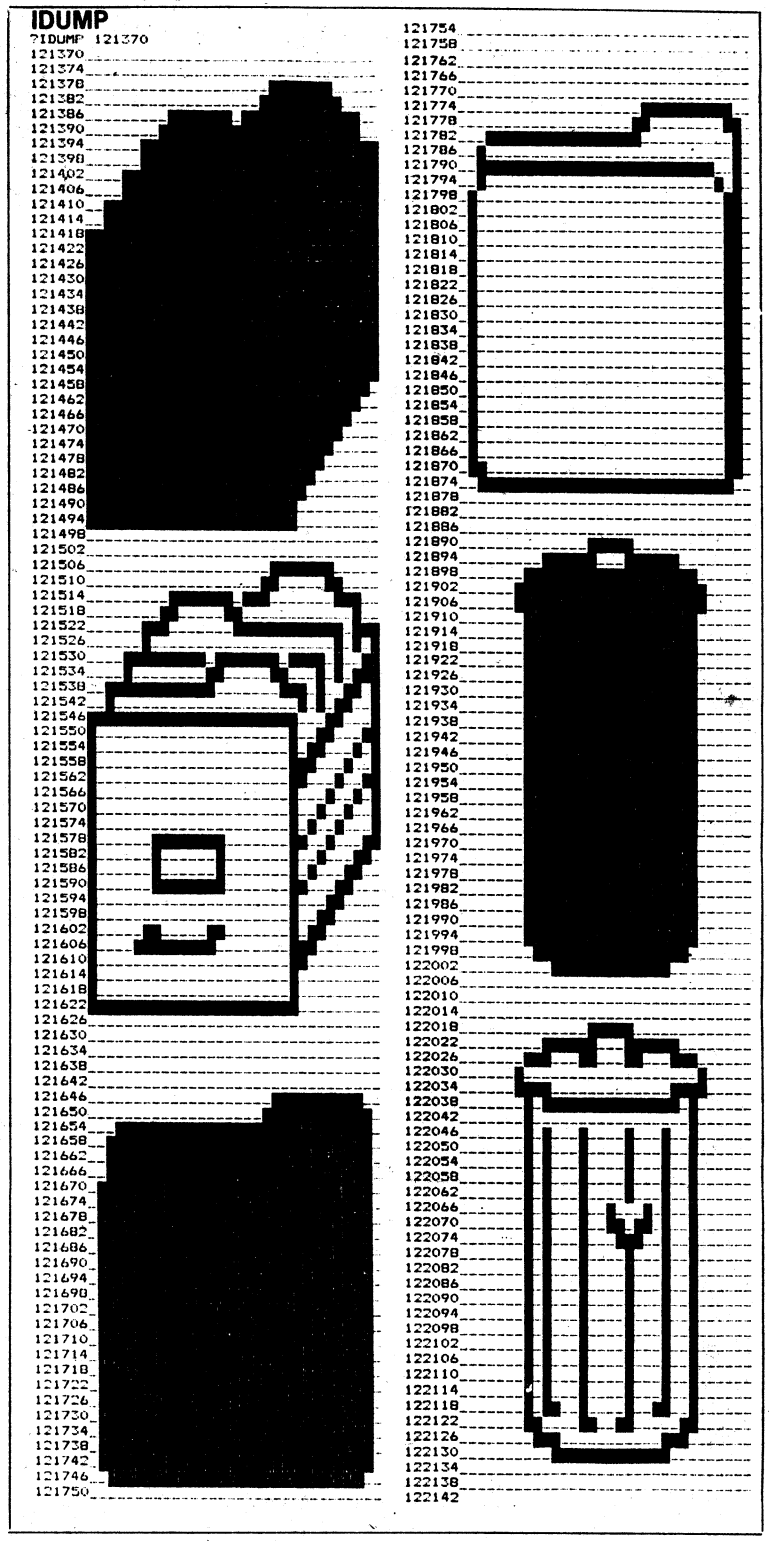
Comments

Type the Logo programs in as shown. Make sure that all typographical errors are resolved and then save them as "IDUMP.LOG" and "FDUMP.LOG."

When preparing to execute, be sure to run "INITDMP" first so that all the variables will have been defined before they are used.

If you want a darker copy on the Epson printer, precede your dump command with: TYPE CHAR 27 PRINT CHAR 71. This command makes the Epson double print everything so that you get a darker copy. Remember that the double print command will stay in effect until you send a new command or until you turn the printer power off and then on. Don't forget to send the COPYON command before you start your dump.

Bit map dumps can locate interesting patterns in memory and aid in troubleshooting. They also provide an achival record of graphics, icons, and font designs. If you have any ideas or comments, please send them to me at: Fred Hatfield, Box 52466, New Orleans, LA 70152. ●



NEW FREE CATALOG

CP/M MSDOS

AFFORDABLE ENGINEERING SOFTWARE

TRSDOS PCDOS

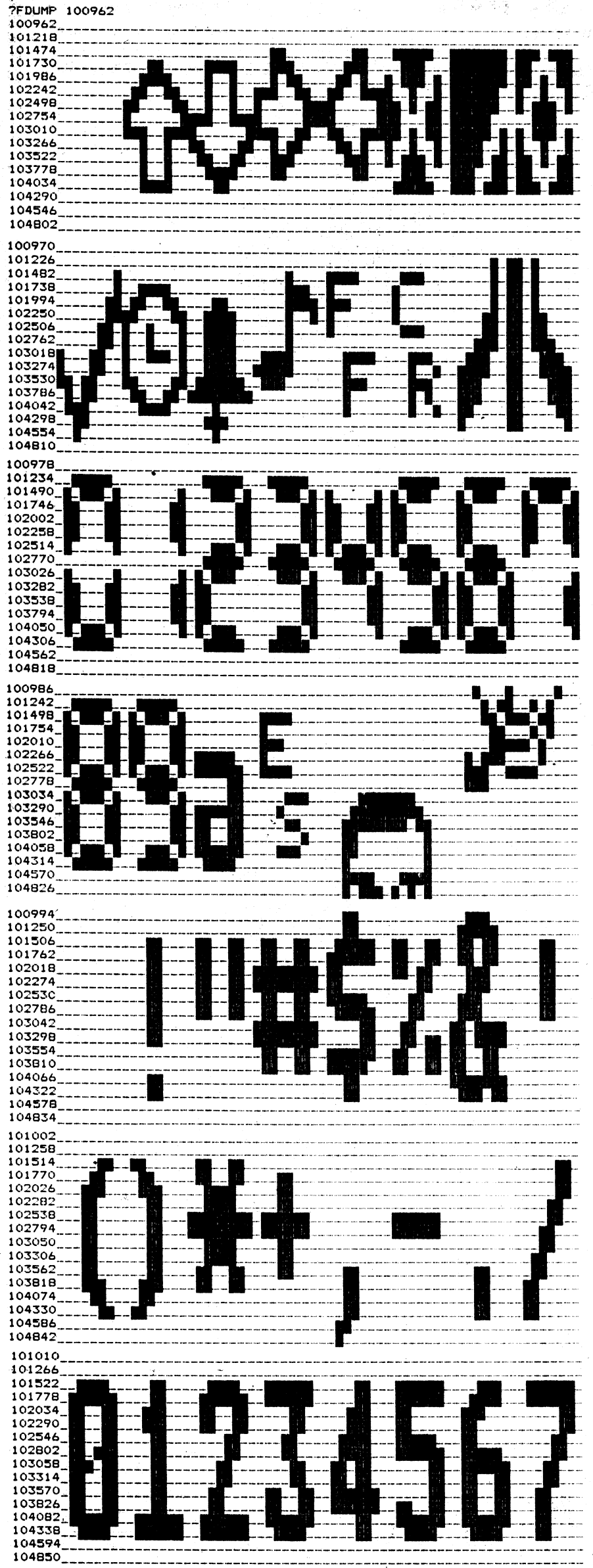
- **LOCIPRO** Root Locus — **$69.95**
- **ACTFIL** Active Filter Design/Analysis — **$69.95**
- **STAP** Static Thermal Analysis — **$69.95**
- **MATRIX MAGIC** Matrix Manipulation — **$69.95**
- **RIGHTWRITER** Proofreader & Writing Style Analyzer — **$74.95**
- **ACNAP2** AC Circuit Analysis — **$69.95**
- **DCNAP** DC Circuit Analysis — **$69.95**
- **SPP** Signal/System Analysis — **$69.95**
- **PLOTPRO** Scientific Graph Printing — **$69.95**
- **PCPLOT2** High Resolution Graphics — **$69.95**

BV Engineering
Professional Software
2200 Business Way, Suite 207 • Riverside, CA 92501 • **(714) 781-0252**

VISA MasterCard

FDUMP continued from page 58

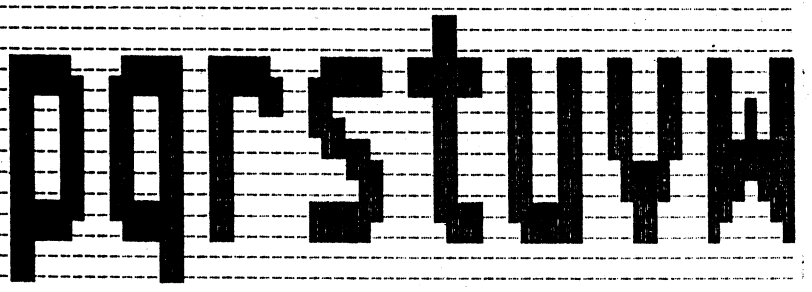
```
 COPYOFF
?
?FDUMP 100962
```



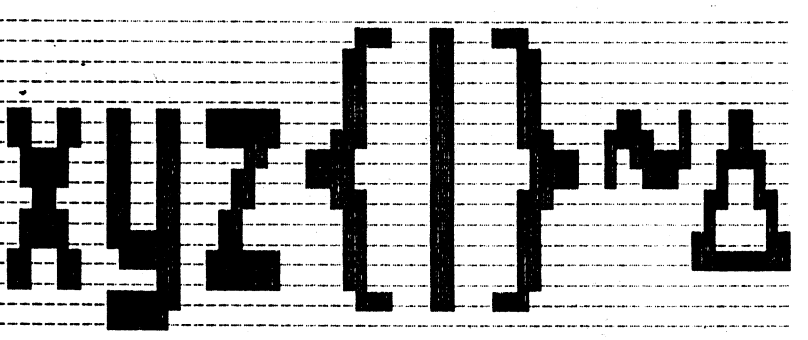
continued on page 146

FDUMP continued from page 144

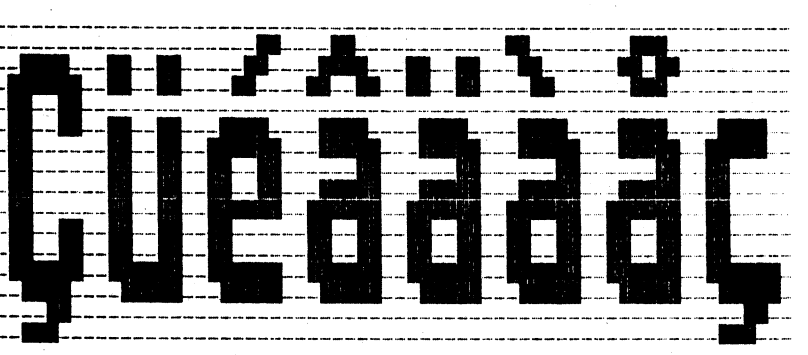
```
101074
101330
101586
101842
102098
102354
102610
102866
103122
103378
103634
103890
104146
104402
104658
104914
```



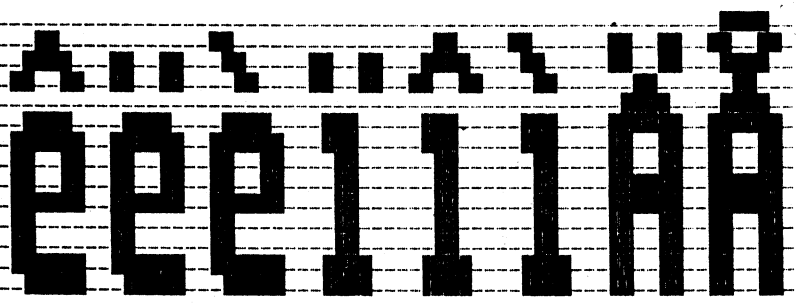
```
101082
101338
101594
101850
102106
102362
102618
102874
103130
103386
103642
103898
104154
104410
104666
104922
```



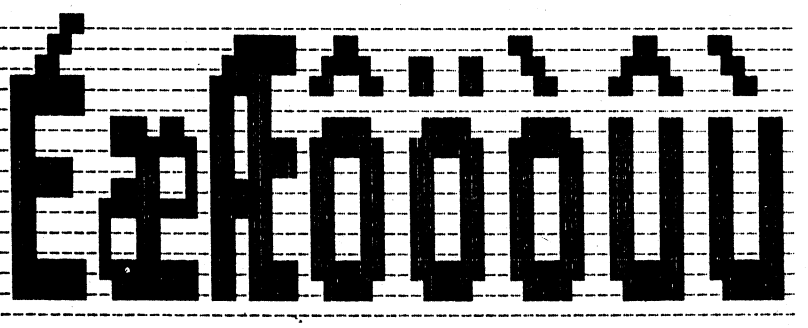
```
101090
101346
101602
101858
102114
102370
102626
102882
103138
103394
103650
103906
104162
104418
104674
104930
```



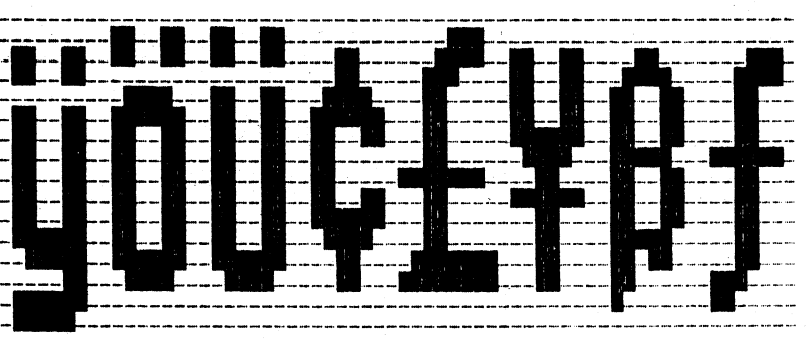
```
101098
101354
101610
101866
102122
102378
102634
102890
103146
103402
103658
103914
104170
104426
104682
104938
```



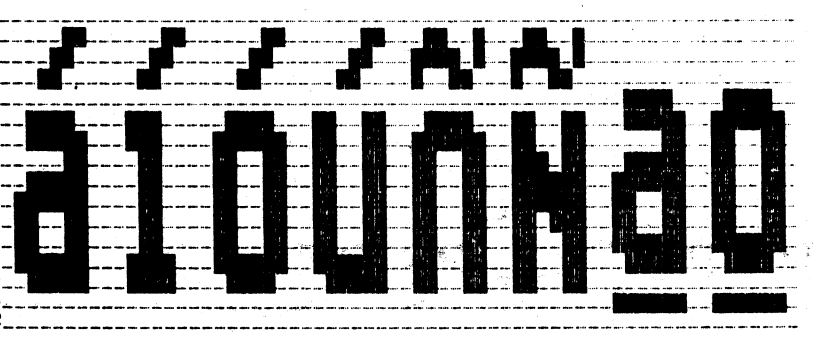
```
101106
101362
101618
101874
102130
102386
102642
102898
103154
103410
103666
103922
104178
104434
104690
104946
```



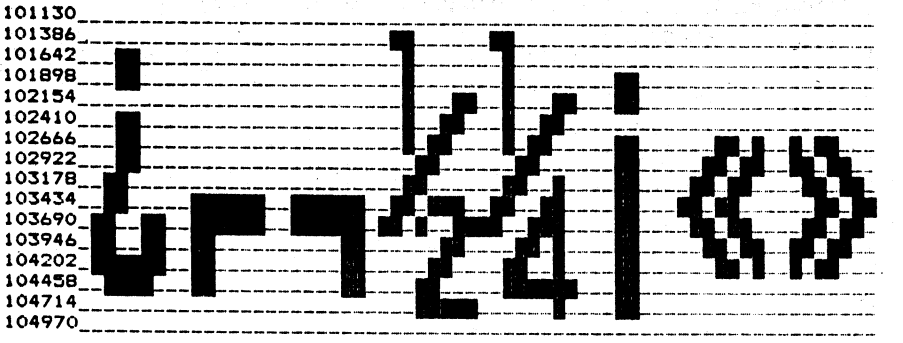
```
101114
101370
101626
101882
102138
102394
102650
102906
103162
103418
103674
103930
104186
104442
104698
104954
```



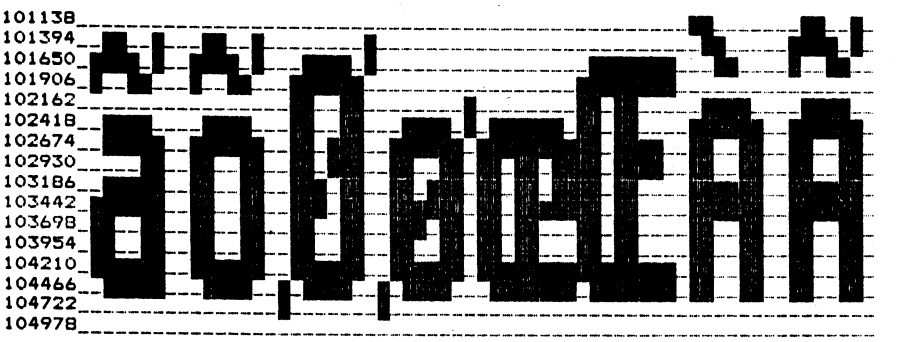
```
101122
101378
101634
101890
102146
102402
102658
102914
103170
103426
103682
103938
104194
104450
104706
104962
```



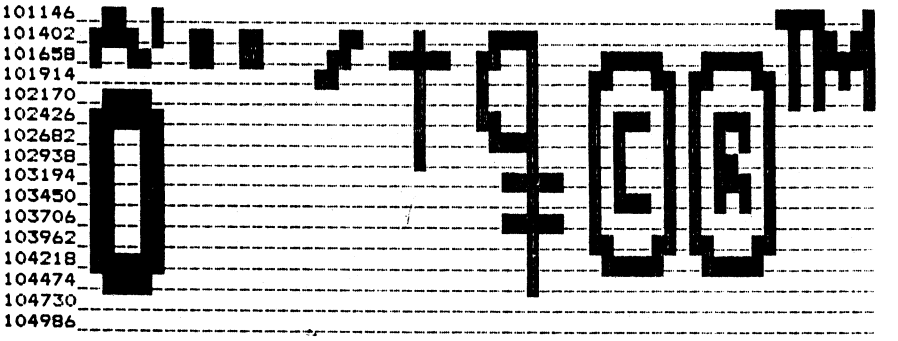
```
101130
101386
101642
101898
102154
102410
102666
102922
103178
103434
103690
103946
104202
104458
104714
104970
```



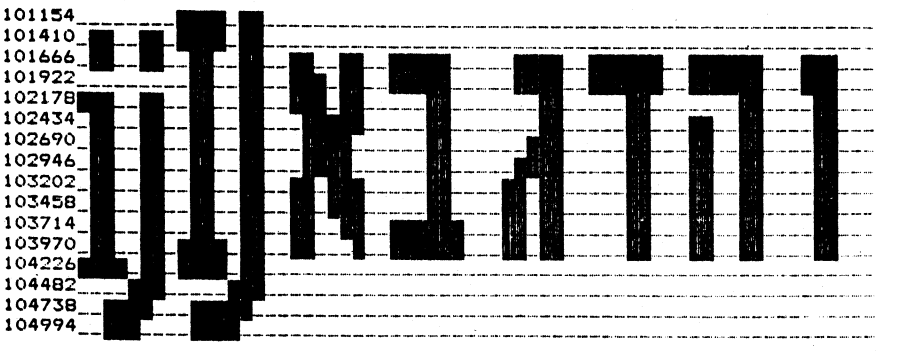
```
101138
101394
101650
101906
102162
102418
102674
102930
103186
103442
103698
103954
104210
104466
104722
104978
```



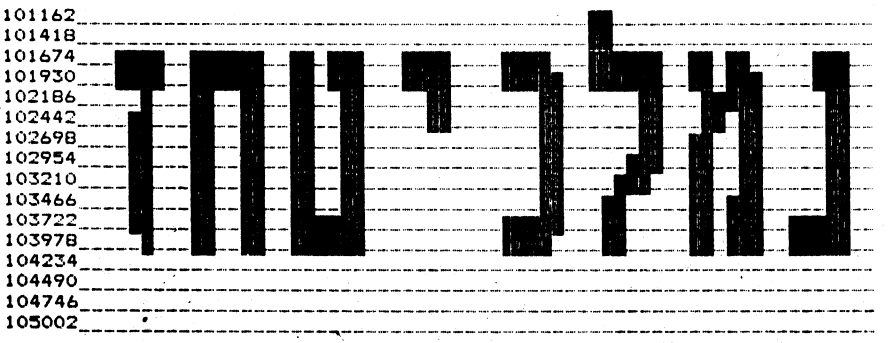
```
101146
101402
101658
101914
102170
102426
102682
102938
103194
103450
103706
103962
104218
104474
104730
104986
```



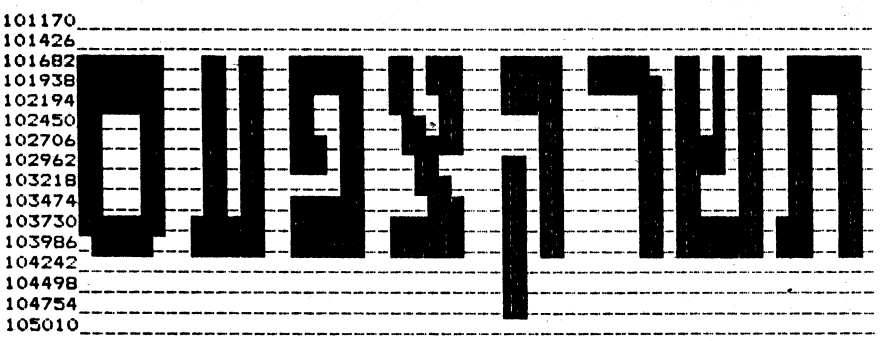
```
101154
101410
101666
101922
102178
102434
102690
102946
103202
103458
103714
103970
104226
104482
104738
104994
```



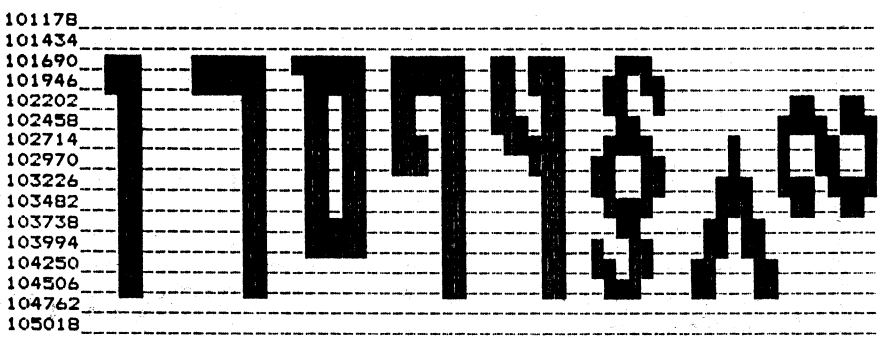
```
101162
101418
101674
101930
102186
102442
102698
102954
103210
103466
103722
103978
104234
104490
104746
105002
```



```
101170
101426
101682
101938
102194
102450
102706
102962
103218
103474
103730
103986
104242
104498
104754
105010
```



```
101178
101434
101690
101946
102202
102458
102714
102970
103226
103482
103738
103994
104250
104506
104762
105018
```



continued on page 147

Applying The Atari
continued from page 58

sion" is available on diskette to readers for $5. (See address at end of this article.) You must have at least a 48K Atari to run RAP with the expanded vocabulary.

Halley's Comet

1986 is, of course, the year of Halley's Comet, and a few software packages on the Halley's Comet theme are available for the Atari astronomers out there. They are:

Halley Patrol, which includes an almanac and observing aid. A diskette for the 800/XL/XE is $19.95. (Urania Systems, Box 4890, Richmond, VA 23220).

Urania Systems (address above) all produces Spacebase, which is an astronomy program that turns your television screen into a planetarium. Over 400 heavenly objects can be plotted on the screen. $17.95 for a diskette for the 800/XL/XE.

The Halley Project is a recreational program which teaches characteristics of planets and moons. On diskette for the 800/XL/XE. (Mindscape, 3444 Dundee Road, Northbrook, IL 60062).

Corrections/Clarifications

In November's column, the first and last lines were mysteriously omitted from the Programmable Keypad Revision. These changes are necessary for the program to function properly with the XL/XE revisions:

```
70 RESTORE:TOT = 0 :FOR
I = 1536 TO 1616:READ NUM
490 FOR I = O TO 16:IF
PR(I)>-1 THEN POKE
1599 + I,PR(I)
```

Additionally, change the following line in the Recipe Manager program:

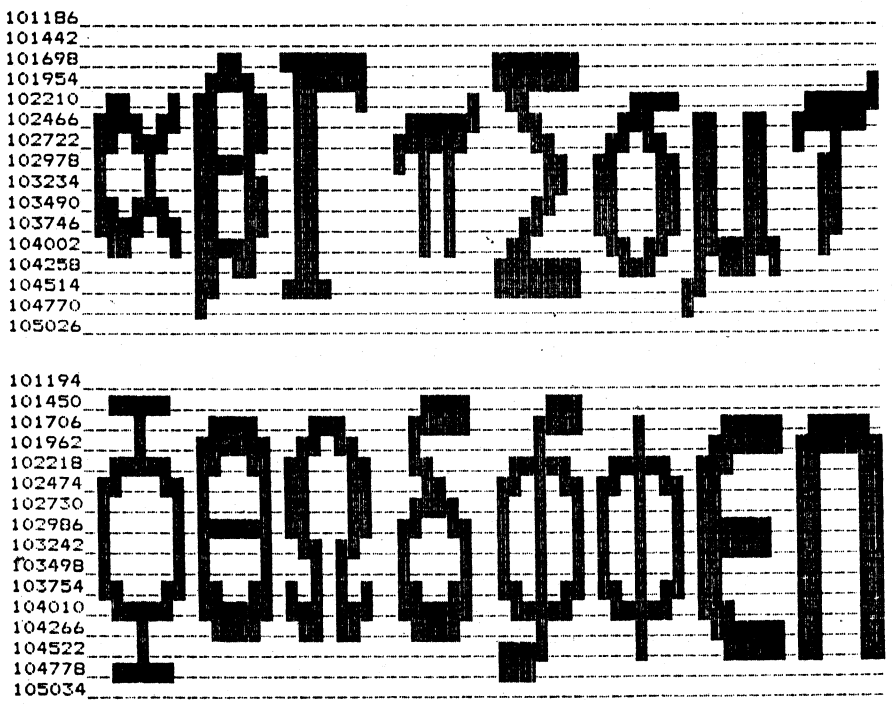
```
1260 IF I = 28 THEN
POP:K = 27:GOTO 730
```

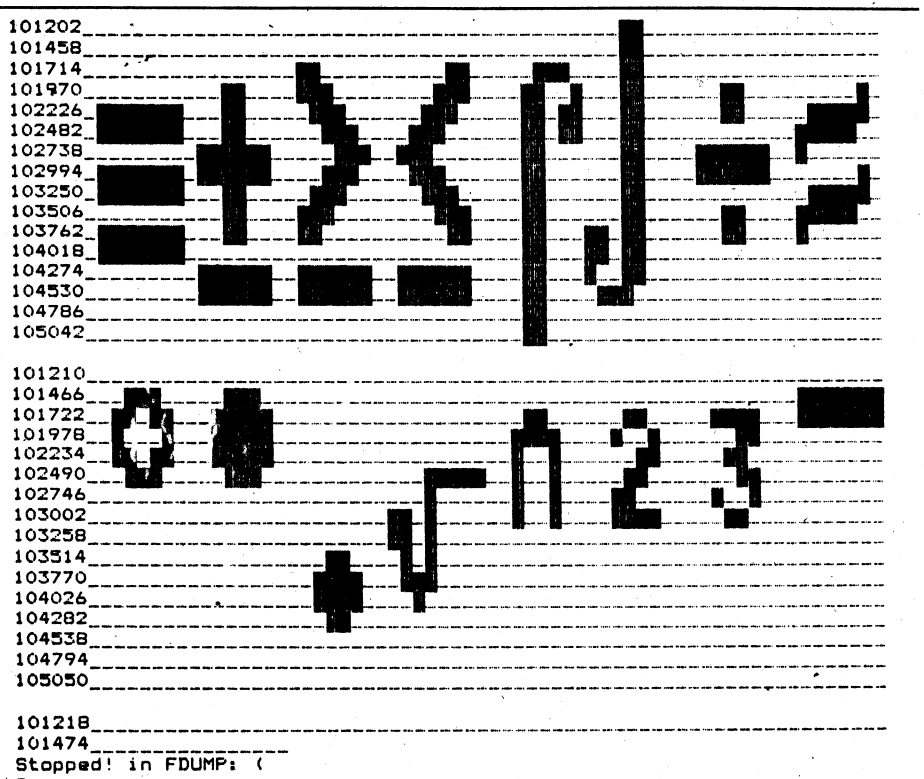
This enables the ESC key to return you to the menu when you are on the CATEGORY: prompt.

In last month's column, the program segment that is labeled the "continued" section of the Simple Memory Tester is actually the remaining lines of the Recipe Manager Additions. Hence, the first part of Recipe

continued on page 149

FDUMP
continued from page 146





RTR OFFER "QUALITY" & "WARRANTY" (818)282-4868 HOT LINE

Mono. Graphic Card $129
w/Printer Port Run Lotus

Mono. & Printer Card $109
Text Mode w/Printer Port

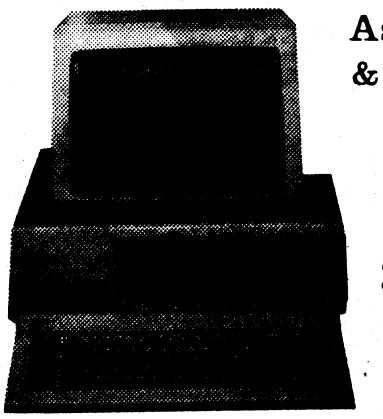
384K MultifunctiOn $129
6-PAK (OK)

Color Graphic Printer $119
RGB, Light Pen Port, Video Optional

Monochrome Card	$ 85
Color Graphic Card	$ 95
Disk Control Card	$ 59
EPROM Burner	$ 139
Serial / Parallel Card	$ 99

PC·XT·AT Keyboard
pc/xt 5151 Type $119
* Separate Cursor & Num. Pad
* Germany Cherry Switch Key
* Professional High Quality
AT 5060 Type $129
* AT Compatible
* Build High Quality

PC/XT BASIC SYSTEM



Assembled & Tested
New Year Sale
$659

Installed in –
* Metal Case w/Speaker
* 640K Type Mother Board
* 135w DC-Fan Power Supply
* 5151 Professional Keyboard
* TEAC Drive w/Disk Controller
* 256K Memory on Board
* 90 Days Warranty

Richwill Tech. Research
–Manufacturer & Distributor–
1200 S Atlantic Blvd., R 107
Alhambra, CA 91803
* C.O.D. Cashier's Check
* Sorry No Cheap Quality Here

PC/XT/AT Mother Board
640K MOther bOard $199
* 8088CPU, 8087 Optional (Øk)
* 8 I/O & EPROM Slots
"AT" Mother Board $call
* 80286CPU, 80287 Optional

2MB Multifunction $ CALL

Case w/ Power Supply $ 169
PC/XT Case Build In SP. & Power S.

PC/XT/AT Metal Case
pc/xt w/speaker $ 59
Flip-Top or Slide-In Metal Case
AT Type $ 99

PC·XT·AT Power Supply
* IBM Same Size
* DC Fan, PWM Type
* Protection Ckt.
* EMI Filter
* Meets UL/FCC
* Low Ripple
* 4 Drives Plug
* AC 110v/220v

135w–pc/xt $99
200w–AT $199

DEALER OEM DISTRIBUTOR SPECIAL PRICE JUST CALL

Atari Help
continued from page 57

Q. I recently purchased a Percom disk for my Atari 800XL because of an article in the June 1983 issue of *Creative Computing* (pp. 114-116). However, the two Percom manuals refer only to the TI 99/4A. Will this drive work with my Atari 800XL?

Paul T. Johnson
Ellenville, NY

A. Unless you know of an electronics engineer who owes you a lot of favors, you're going to have a rough time trying to get a TI 99/4A Percom to work with the Atari. If you can somehow return the drive to where you purchased it, do so. I don't think you can still get an Atari Percom drive, but you may want to consider an Atari 1050 disk drive. Prices on this disk drive have dropped greatly in recent months.

Q. Do you know what's involved hooking up my Atari 130XE to my shortwave communications-receiver to decode morse on-line?

Robert Harren
Pueblo, CO

A. I suggest you contact Cantronics (1202 E. 23rd Street, Lawrence, KS 66044). I am told that this company sells various Atari-compatible interfaces and software for shortwave communications. Good luck.

Q. Thanks for the keyboard programs (latest version in November 1985 *Computer Shopper*, page 180). How can I change the program to make it operate with joystick port #2 instead of #1?

Donald Parsons
Delmar, NY

A. The following lines can be changed to read from joystick port 2 instead of port 1:

```
80 DATA 92,228,174,133,2,240,5,202
90 DATA 134,204,240,40,174,121,2,228
120 DATA 204,134,206,230,205,173,115,2
```

Address Atari-related questions to: Jeff Brenner, "Atari Help" c/o *Computer Shopper*, P.O. Box F, Titusville, FL 32781-9990. ●

MacUniverse
continued from page 94

(period) sequence to select text from the insertion point to the bottom of a document. This causes an emergency exit from the program;

2. MULTIPLAN: In Multiplan versions 1.02 and earlier, if the information stored in the clipboard is greater than 50 cells, and you see the message "Save Formatted/Unformatted Values," paste them into the Scrapbook before trying to paste into another application. Clipboards storing more than 50 cells will not transfer to the other application; and

3. CHART: When using Chart with Switcher, make it the first application that is installed. If you do not, arrows on charts may not appear in their correct positions.

BOOKS: Your Universe Master recently received two books that can be recommended; Clapp, *Doug Clapp's Jazz Book; The Quintessential Guide to Mastering Jazz on Your Macintosh* and Aker, *MicroSoft Basic Programming for the Mac*. Both are published by Scott, Foresman and company and cost $17.95.

Clapp's book is merely an introduction to using Jazz; not a Jazz encyclopedia. This book should be read by anyone thinking about buying Jazz. It will provide the reader with an overview of the program's capabilities and help the novice user get started. If you already have Jazz or are a computer whiz, save your money by not buying this book.

Aker's book is similarly limited. As stated in the introduction "whether you are new to BASIC or new to the Macintosh or new to both, this guide is meant for you." All the important concepts of MicroSoft BASIC are covered along with short programs illustrating each idea. The only caveat with this book is that your Universe Master does not know how current it is. Microsoft will shortly release version 2.01 of BASIC. If that version is as different from version 2.0 as 2.0 was from 1.0, then the book is seriously outdated.

COMPUSERVE: This month's CompuServe pick is an arcade game called Social Climber. The goal of the game is to transverse a level of seven floors within a limited time period without being hit by a moving elevator. Every time one level is transversed another level appears. The higher the level, the faster the elevators move and the less time you have to transverse it.

Social Climber is shareware and you are encouraged to send a small monetary token to the developer, CSI Design Group. Social Climber is found in DL5 of CompuServe MAUG SIG under the file name SCLIMB.BIN.

continued on page 160

SMALL BUSINESS SOFTWARE

The COMPLETE BUSINESS SYSTEM is leading the way with an accounting system based on **CHECK BOOK** accounting the small business way. No programming knowledge needed to operate **The COMPLETE BUSINESS SYSTEM**, you will appreciate the easy to use menus. **The COMPLETE BUSINESS SYSTEM** (twenty modules) covers almost every possible application needed for your business, each module includes:

- Two types of internal help messages.
- A report generator to customize reports.
- A manual written in English, not programmer, for the first time user.
- Runs under PC-DOS or MS-DOS on dual floppies or hard disk.
- Only file limitation is your disk space.

☐ (1) GENERAL ACCOUNTING
☐ (2) ACCOUNTS RECEIVABLE
☐ (3) ACCOUNTS PAYABLE
☐ (4) PAYROLL
☐ (5) APPOINTMENTS
☐ (6) ESTIMATING
☐ (7) JOB COSTING
☐ (8) INVENTORY
☐ (9) BUDGETING
☐ (10) ORDER ENTRY
☐ (11) TIME BILLING
☐ (12) PURCHASING
☐ (13) PERSONNEL RECORDS
☐ (14) EQUIPMENT MAINTENANCE
☐ (15) PROPERTY MANAGEMENT
☐ (16) WORK SCHEDULING
☐ (17) CONTRACT BILLING
☐ (18) ROUTE SCHEDULING
☐ (19) PERSONAL CONTACT FILES
☐ (20) SALES MANAGEMENT

You may order modules 1,2,3,4 and 5 at a **Special Price, $49**
You may order any module at $15.00 each (mark with "X).
You may order all the modules at a **Special Price, $200**
Software Support Available.

5 modules =$ 49.00
_____X $15.00 =$ _____
20 Modules =$ 200.00
Pa. Sales tax 6% =$ _____
Ship & Handling =$ 4.00
Total=$ _____

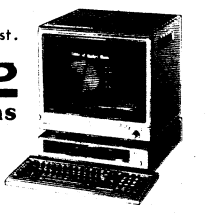
Personal Checks Accepted
BROWN KELLOGG, INC.
100 BORLAND RD.
EXPORT, PA. 15632
(412) 327-3200

_____ MasterCard _____ Visa
Acct. No. _____
Exp. Date _____
Sign. _____

ATARI 520-ST

9 AM to 9 PM daily
Ask for 550/555 Series price list.

SANYO
Microcomputer Systems



Tech manuals, software, hardware for Sanyo 550/555.
SANYO IBM Video Board with GW-BASIC. $175
RS-232C Serial Port for Sanyo 550/555. $CALL
Memory Chips for Sanyo 550/555. $CALL
MISSING LINK Board for 550/555. Up to 768K RAM, clock/calendar with battery back-up, IBM soft video, plus RAM disk and print spool software. $225
NEWPOKER! for 550/555. Great fun for 1-6 players. Includes free RAMTEST. $25
CORNERMAN Desk Manager. Excellent Sidekick type utility for 550/555. $40
SUPER ZAP Disk Editor. Easy read/write access to any track and sector on disk. $50
MTBASIC Compiler for 550/555. Produces super fast code. No run-time fees. $50
A-OK DOS DSDD
DS-DOS disk drives
TEAC DSQD

MULTI-TRONIX™

3210 Terry Drive • Toledo, OH 43613 • Telephone: 419/472-3360

for PC jr.
DISK DRIVES WITH CONTROLLER
$299 SAVE

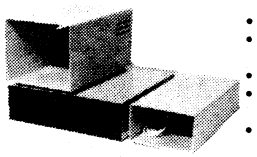
ATR 8000 WITH CP/M
$350 MS-DOS ADD $550
DISK DRIVES SS . . $99.95

TANDON 10MEG HARD DISK
ST603S
$195 Limited Supply

ATARI
ATR8000 64K
HARD DISK DRIVE
$499

5¼" DISK DRIVE CASES w/Power
SINGLE ½ Ht Cases w/Power . . $44.95
DUAL ½ Ht Cases w/Power . . $55.95
HARD DISK Single w/Power $99.95
SINGLE ½ Ht Case Only $19.95
DUAL ½ Ht Case Only $29.95

5¼" DISK DRIVE CASES W/POWER SUPPLIES



- Cases accommodate all standard 5¼" drives
- New chip resistant finish
- Over current and over voltage protection
- Dealer inquiries invited
- Call or write for quantity discounts
- Guaranteed in writing for 120 days

Dual Power Supplies
- Horizontal – 12x12½ $69.95
- Vertical – 7x12x6 . . . . . $69.95
- Single Horiz. P/S – 6x12x3½ $44.95
- 2-Drive Cable $21.00
- 4-Drive Cable $32.00
- Dual Case, Horiz. or Vert. (W/O P/S) $29.95
- Single Case, Horiz. (w/o P/S) $21.95

SINGLE 8" SS DRIVE ATR READY $199
DUAL 8" SS DRIVES ATR READY $349
CO-POWER BOARD W/1MB RAM . . . . . CALL

FOR IBM & COMPATIBLES. INTERNAL MOUNT:
10 MB HARD DISK $499 W/CONTROLLER
20 MB HARD DISK $549 W/CONTROLLER

COMPUTERS COLUMBIA . . $1200
CORONA . . . . CALL
COMPUPRO
2 HD 16MB EA CALL

ACTRIX PORTABLE CP/M & MS-DOS
Built-In Printer, 2 Modems $1895

PRICES MAY BE LOWER AT TIME OF PUBLICATION
TERMS: Personal checks allow 14 days, COD, MO., Certified Checks . . . Credit Cards and 3.5%
Shipping and handling: $2.00 plus current UPS or Parcel Post rates.

ORDERS ONLY 1-800-351-0295
IB COMPUTERS 503-297-8425
1519 S.W. Marlow, Portland, OR 97225

PUT ALL CABLES & POWER SUPPLIES INTO ELEGANT BOX UNDER YOUR MONITOR.
CENTRAL SWITCH.
ROOM FOR 3RD DRIVE
POWER SUPPLY. FAN
SALE!
MINDSET COMPUTERS
MODULES
SOFTWARE

ATARI WE SELL EVERYTHING FOR ATARI

SCHOOLS NOTE: NETWORK
4 Ataris to Drive and/or Printer
ONLY $125 + CABLES

TI OWNERS WE STOCK CORCOMP STUFF

GIGANTIC SALE!!!
CENTURIAN ENTERPRISES

Atari Hardware & Parts

Centurian Atari 810 Disk Drive	$ 199	(7)
Atari 1050 Disk Drive	$ 169	(6)
1050 Double Density Kit (US Doubler)	$ 54	(3)
Happy Enhancement (1050 or 810)	$ 157	(3)
Atari 130XE Computer, 128K	$ 137	(5)
Atari 520ST Computer System, Includes Disk Drive, Computer w/512K, Monitor, + FREE-SOFTWARE!!!!!!! Color System $ 929 (12) Monochrome System $ 749 (10) Add a Star SG-10 Printer w/NLQ $ 249 (7) Free Cable!		
Atari Numeric Keypad w/Driver program	$ 17	(3)
Atari 400 48K RAM Expansion. Complete	$ 35	(2)
400/800 GTIA CPU Board	$ 18	(2)
800 OS ROM version B Board	$ 17	(2)
400/800/810/850/1050/1020 Power Adapter	$ 15	(3)
13 pin I/O Plug. Cable end or Port type	$ 3	(1)
I/O Data Cable. 6 foot length	$ 12	(2)
Atari Joysticks. $ 5 (1) each - Paddles $ 8 (2)		
Comrex Commander Joystick, Super deal	$ 8	(2)

VIRTUALLY EVERY TYPE OF ATARI RELATED PRODUCT IS AVAILABLE AT CENTURIAN. CALL OR WRITE FOR FREE SPECIALS FLYER. OR SEND $1 FOR A FULL CATALOG! Dealer pricing available!!!

Atari Software & Etc.

Atari Writer	$ 29	(2)
Atari Logo Package	$ 35	(2)
Atari Microsoft Basic II, cart, w/ref. guide	$ 25	(3)
Atari Pilot	$ 20	(3)
Atari Basic cart. Kit	$ 15	(3)
Atari Assembler/Editor cart. Kit	$ 15	(3)
Atari Conversational Spanish or Italian	$ 12	(3)
Atari Inv. to Programming 1, 2, or 3	$ 10	(2)
Atari E.T. Phone Home (cart.)	$ 5	(1)
Graph-it	$ 7	(1)
Atari Touch Typing	$ 5	(2)
Star League Baseball	$ 7	(1)
DE RE Atari book	$ 12	(3)

We have much, much more available. 520ST software and peripherals. Disk Drives. Hard disks and more.
CENTURIAN DISKETTES, DSDD 5¼", Lifetime bx/10 $8.90 (1)

TEXAS INSTRUMENTS TI99/4 HARDWARE

TI99	Replacement Keyboard	$ 7	(3)
TI99	Power Supply Board	$ 7	(2)
TI99	Power Adapter	$12	(3)
TI99	Video Modulator Unit	$12	(3)
TI9	Integrated Circuit Chips		
TMS 9900 – $13 (1)		TMS 9901 – $ 5 (1)	
TMS 9904 – $ 5 (1)		TMS 9918 – $ 9 (1)	
Complete set of all four		$27 (3)	

Ordering Information: UPS shipping charges are shown in brackets next to the price of the item. Shipping charges must be included with all orders. You may call in your order or mail it in. We accept checks, money order, MC & Visa, and COD. Order now, some supplies are limited.

CENTURIAN ENTERPRISES P.O. BOX 3233 SAN LUIS OBISPO, CA 93401 (805)544-6616 Office: 890 Monterey St., SLO.

(805) 544-6616

PERSONAL APPOINTMENT CALENDAR & EDITOR

```
PEJ 10 REM PERSONAL APPOINTMENT CALENDAR/EDITOR
KGJ 20 REM COPYRIGHT 1986 JEFF BRENNER
YVJ 30 MIN=1985
FXJ 40 DIM DISK$(3),FILE$(20):DISK$="D1:"
EPJ 50 FILE$=DISK$:FILE$(LEN(FILE$)+1)="PACE.DAT"
YBJ 60 DIM TEXT$(200),A$(200),SP$(24),NAME$(30),DATE$(24),DAYS(30),SUM(11)
AUJ 70 DIM PW$(20),LS$(366),HS$(366),BYTE$(366),IN$(27),MR$(4),DEL$(23),S$(5)
LXJ 80 DIM MSG$(240):MSG$=CHR$(32):MSG$(240)=CHR$(32):MSG$(2)=MSG$
NUJ 90 TEXT$="START":GOSUB 1610:S$=TEXT$
DVJ 100 DEL$(1)=CHR$(156):DEL$(23)=CHR$(156):DEL$(2)=DEL$:DEL$(1,1)=CHR$(157)
LLJ 110 DIM MONTH$(36):RESTORE 2740:FOR I=1 TO 12:READ A$,DAYS
AUJ 120 MONTH$(LEN(MONTH$)+1)=A$(1,3):DAYS(I)=DAYS:NEXT I
GDJ 130 DIM DAY$(21):FOR I=1 TO 7:READ A$:DAY$(LEN(DAY$)+1)=A$(1,3):NEXT I
JXJ 140 SP$(1)=CHR$(32):SP$(24)=CHR$(32):SP$(2)=SP$:A$=CHR$(32):A$(2,2)=CHR$(29)
TVJ 150 A$(3,3)=CHR$(30):IN$=A$:FOR I=1 TO 8:IN$(LEN(IN$)+1)=A$:NEXT I
QHJ 160 RESTORE 2770:FOR I=0 TO 11:READ SUM:SUM(I)=SUM:NEXT I
JHJ 170 DL=PEEK(560)+256*PEEK(561):MR$=CHR$(28):MR$(2,2)=CHR$(156)
IQJ 180 MR$(3,4)=MR$
MEJ 190 OPEN #1,4,0,"K:":PRINT CHR$(125);"STAND BY...":GOSUB 2560:GOSUB 2920
EEJ 200 GOSUB 1450:POKE 85,8
UDJ 210 PRINT "INSERT YOUR DATA DISKETTE"
UOJ 220 TEXT$="RETURN":GOSUB 1610
BDJ 230 POKE 752,1:POKE 85,10:PRINT "PRESS ";TEXT$;" TO BEGIN":POKE 764,255:D=25
RJJ 240 POKE 1771,10:GOSUB 1500:IF PEEK(764)<255 THEN 260
FQJ 250 POKE 1771,4:GOSUB 1500:IF PEEK(764)=255 THEN 240
XHJ 260 GET #1,N:POSITION 2,3:PRINT CHR$(156);CHR$(156);:POKE 1771,10
GVJ 270 A$=DISK$:A$(LEN(A$)+1)="PACE.PNT"
JIJ 280 TRAP 1940:OPEN #2,4,0,A$:INPUT #2;NAME$,DATE$,M,D,Y,PW$:TRAP 40000
XMJ 290 FOR I=1 TO 3:INPUT #2,A$:LS$(LEN(LS$)+1)=A$:NEXT I
WWJ 300 FOR I=1 TO 3:INPUT #2,A$:HS$(LEN(HS$)+1)=A$:NEXT I
FUJ 310 FOR I=1 TO 3:INPUT #2,A$:BYTE$(LEN(BYTE$)+1)=A$:NEXT I:CLOSE #2
HXJ 320 IF LEN(PW$)=0 THEN 390
SLJ 330 FOR I=1 TO 3:POSITION 2,2
LRJ 340 POKE 1770,4:POKE 694,0:POKE 702,64:PRINT "PASSWORD:";INPUT #16;A$
XIJ 350 IF A$=PW$ THEN 380
CGJ 360 PRINT CHR$(28);CHR$(156);CHR$(29);CHR$(156);"(";3-I;") TRY AGAIN."
NUJ 370 PRINT CHR$(253);:NEXT I
SOJ 380 IF I=4 THEN GRAPHICS 0:PRINT "Access denied.":NEW
YCJ 390 POKE 1770,10:POKE 84,2:PRINT "HELLO, ";NAME$;"!":TEXT$="PACE":GOSUB 1610
OOJ 400 PRINT "The last time you used ";TEXT$;" was on":PRINT DATE$;"."
ANJ 410 GOSUB 420:GOTO 450
VFJ 420 PRINT SP$:PRINT "Use the ";S$;", ";
XMJ 430 TEXT$="SELECT":GOSUB 1610:PRINT TEXT$;" and ";
RAJ 440 TEXT$="OPTION":GOSUB 1610:PRINT TEXT$;" KEYS":RETURN
XYJ 450 PRINT " to set today's month, day and year."
SUJ 460 TEXT$="RETURN":GOSUB 1610:POKE 85,4
MNJ 470 PRINT "PRESS ";TEXT$;" WHEN THE DATE IS SET":GOSUB 480:GOTO 720
OFJ 480 POKE 764,255:PRINT :T=PEEK(84):FOR I=1776 TO 1778:POKE I,14:NEXT I
UNJ 490 FOR I=1779 TO 1781:POKE I,0:NEXT I:FOR I=1782 TO 1790:POKE I,4:NEXT I
PLJ 500 POKE 84,9:RESTORE 2420:FOR I=1 TO 3:POKE 85,13
WMJ 510 FOR J=1 TO 15:READ N:PRINT CHR$(N);:NEXT J:PRINT :NEXT I
DSJ 520 FOR I=DL+17 TO DL+19:POKE I,146:NEXT I:POKE 54276,10
MBJ 530 FOR I=1 TO 3:READ X:POKE 85,X:FOR J=1 TO 5:READ N:PRINT CHR$(N);
LDJ 540 NEXT J:PRINT :NEXT I
LBJ 550 POKE 84,10:SOUND 0,0,0,0
TFJ 560 POKE 85,14:PRINT MONTH$(M*3-2,M*3);:POKE 85,19:IF D<10 THEN PRINT "0";
QCJ 570 PRINT D;:POKE 85,23:PRINT Y;:SR=0
RVJ 580 NUM=SUM(M-1)+D+INT((Y-1752-(M<3))/4)+365*(Y-1753)-2
FIJ 590 YH=Y-(M<3):NUM=NUM-INT(YH/100)+INT(YH/400)-13
DPJ 600 WD=NUM-7*INT(NUM/7):IF SR THEN RETURN
CEJ 610 POSITION 28,13:PRINT DAY$(WD*3+1,WD*3+3)
FJJ 620 A=PEEK(53279):IF A=7 AND PEEK(764)=255 THEN W=0:GOTO 620
IKJ 630 IF A<>7 THEN SOUND 0,INT(A/2),6,4
WVJ 640 LP=0:IF M=2 AND Y/4=INT(Y/4) THEN LP=1
JHJ 650 IF Y/100=INT(Y/100) THEN IF Y/400<>INT(Y/400) THEN LP=0
LQJ 660 IF A=6 THEN M=M+1:IF M>12 THEN M=1
GXJ 670 IF A=5 THEN D=D+1:IF D>DAYS(M)+LP THEN D=1
FWJ 680 IF A=3 THEN Y=Y+1:IF Y>MIN+15 THEN Y=MIN
UGJ 690 IF W<20 AND PEEK(53279)<>7 THEN W=W+1:SOUND 0,0,0,0:GOTO 690
OHJ 700 GOSUB 2530:IF PEEK(764)<>12 THEN 550
AYJ 710 RETURN
NKJ 720 SOUND 0,0,0,0:GOSUB 1520:GOSUB 1580
FRJ 730 TEXT$="PRESS":TEXT$(LEN(TEXT$)+1)=CHR$(2):POSITION 8,1
JOJ 740 TEXT$(LEN(TEXT$)+1)="ESC":TEXT$(LEN(TEXT$)+1)=CHR$(22)
HAJ 750 TEXT$(LEN(TEXT$)+1)="FOR TOMORROW'S":GOSUB 1610:PRINT TEXT$
SGJ 760 CLOSE #2:OPEN #2,12,0,FILE$
RZJ 770 POSITION 8,2:PRINT "Appointments for today,":GOSUB 780:GOTO 810
HAJ 780 RESTORE 2760:FOR I=0 TO WD:READ A$:NEXT I:POKE 85,8
WOJ 790 PRINT A$;CHR$(44);CHR$(32);MONTH$(M*3-2,M*3);CHR$(46);CHR$(32);
DGJ 800 PRINT D;CHR$(44);CHR$(32);Y;:PRINT SP$(1,33-PEEK(85));:RETURN
TPJ 810 GOSUB 2530:IF SEC+BYTE THEN POINT #2,SEC,BYTE
BBJ 820 GOSUB 830:GOTO 850
CBJ 830 FOR I=1 TO 9:A$=SP$:IF SEC+BYTE>0 THEN INPUT #2;A$
FEJ 840 POSITION 8,1+3:PRINT A$:NEXT I:RETURN
VOJ 850 POKE 764,255:POSITION 8,4:GOSUB 1920:IF CT THEN GOSUB 1350
CBJ 860 POSITION 8,2:PRINT "Tomorrow's Appointments."
APJ 870 TEXT$="TO CONTINUE":TEXT$(LEN(TEXT$)+1)=SP$(1,3):GOSUB 1610
RXJ 880 POSITION 18,1:PRINT TEXT$;:POSITION 8,1:PRINT CHR$(255);CHR$(160)
BIJ 890 POSITION 32,1:PRINT CHR$(32)
XEJ 900 REC2=REC:D2=D:M2=M:Y2=Y:WD2=WD:WD=WD+1:IF WD=7 THEN WD=0
WMJ 910 D=D+1:IF D>DAYS(M)+LP THEN D=1:M=M+1:IF M>12 THEN M=1:Y=Y+1
NEJ 920 POSITION 8,3:GOSUB 780
TSJ 930 GOSUB 2530:IF SEC+BYTE THEN POINT #2,SEC,BYTE
EOJ 940 GOSUB 830
VRJ 950 POKE 764,255:POSITION 8,4:GOSUB 1920:IF CT THEN GOSUB 1350
HAJ 960 GOSUB 1450:PRINT "Upcoming important entries:"
MTJ 970 POKE 752,1:PRINT :WD=WD+1:IF WD=7 THEN WD=0
RSJ 980 LN=LN+1:D=D+1:IF D>DAYS(M)+LP THEN D=1:M=M+1:IF M>12 THEN M=1:Y=Y+1
IZJ 990 RESTORE 2760:FOR I=0 TO WD:READ A$:NEXT I
JRJ 1000 PRINT A$(1,3);CHR$(32);M;"/";D;": ";
CZJ 1010 GOSUB 2530:IF SEC+BYTE=0 THEN GOTO 1060
CLJ 1020 POINT #2,SEC,BYTE
YIJ 1030 FOR J=1 TO 9:INPUT #2;A$:IF A$(1,1)<>"*" THEN NEXT J:GOTO 1100
YIJ 1040 PRINT A$:LN=LN+1:IF LN<16 THEN NEXT J:GOTO 1060
COJ 1050 GOSUB 1080:GOSUB 1450:NEXT J
RCJ 1060 IF LN>15 THEN GOSUB 1080:GOSUB 1450
FBJ 1070 GOTO 1100
OMJ 1080 PRINT :POKE 85,8:TEXT$="RETURN":GOSUB 1610
HBJ 1090 PRINT "Press ";TEXT$;" for more.":GET #1,A:LN=0:RETURN
KWJ 1100 IF REC<REC2+7 THEN 970
DHJ 1110 D=D2:M=M2:Y=Y2:WD=WD2:TEXT$="RETURN":GOSUB 1610
DNJ 1120 PRINT :POKE 85,8:PRINT "Press ";TEXT$;" to continue.":GET #1,A
EOJ 1130 GOSUB 1450:PRINT :PRINT "Want to enter appointments? ";:GOSUB 2460
WMJ 1140 IF N=78 THEN 2800
XWJ 1150 PRINT "Want to define the control keys? ";:GOSUB 2460
WJJ 1160 IF N=78 THEN 1220
IPJ 1170 PRINT "Type up to 24 characters for each":PRINT "control key."
OSJ 1180 TEXT$="RETURN":GOSUB 1610:PRINT "Press ";TEXT$;" by itself when you've"
UFJ 1190 PRINT "finished defining control keys."
HVJ 1200 PRINT :PRINT :FOR I=65 TO 74:PRINT MR$;"CONTROL-";CHR$(I);":"
JMJ 1210 INPUT #16;A$:IF LEN(A$) THEN MSG$((I-65)*24+1,(I-65)*24+24)=A$:NEXT I
GFJ 1220 GOSUB 1450:GOSUB 420:PRINT "to select date to add appointments."
OFJ 1230 PRINT :POKE 85,4:TEXT$="RETURN":GOSUB 1610
SPJ 1240 PRINT "PRESS ";TEXT$;" WHEN THE DATE IS SET"
NYJ 1250 POKE 752,1:GOSUB 480:POKE 752,0:SOUND 0,0,0,0:GOSUB 1520:GOSUB 1580
UVJ 1260 TEXT$="PRESS":TEXT$(LEN(TEXT$)+1)=CHR$(2):TEXT$(LEN(TEXT$)+1)="ESC"
JCJ 1270 TEXT$(LEN(TEXT$)+1)=CHR$(22):TEXT$(LEN(TEXT$)+1)="TO CONTINUE"
MJJ 1280 GOSUB 1610:POSITION 8,1:PRINT CHR$(160);TEXT$;CHR$(160);CHR$(160)
CYJ 1290 POSITION 8,2:PRINT "Appointments for: ";:GOSUB 780
YMJ 1300 IF SEC+BYTE>0 THEN POINT #2,SEC,BYTE
SJJ 1310 GOSUB 830:POSITION 8,4:GOSUB 1920:IF CT THEN GOSUB 1350
BAJ 1320 GOSUB 1450:PRINT "Add or change more appointments? ";:GOSUB 2460
WNJ 1330 IF N=78 THEN 2800
FEJ 1340 GOTO 1220
XIJ 1350 NF=1:GOSUB 2530:IF SEC+BYTE>0 THEN NF=0:POINT #2,SEC,BYTE:GOTO 1390
SJJ 1360 CLOSE #2:OPEN #2,9,0,FILE$
NJJ 1370 NOTE #2,SEC,BYTE:H=INT(SEC/256):L=SEC-H*256
UIJ 1380 HS$(REC,REC)=CHR$(H):LS$(REC,REC)=CHR$(L):BYTE$(REC,REC)=CHR$(BYTE)
HOJ 1390 POKE 842,13:FOR I=1 TO 9:POSITION 8,3+I:INPUT #16;A$
WRJ 1400 IF LEN(A$)>24 THEN A$=A$(1,24)
SQJ 1410 IF LEN(A$)<24 THEN A$(LEN(A$)+1,24)=SP$
FLJ 1420 PRINT #2;A$:NEXT I:POKE 842,12
VLJ 1430 IF NF THEN CLOSE #2:OPEN #2,12,0,FILE$
PBJ 1440 CT=0:RETURN
TCJ 1450 GRAPHICS 0:POKE 16,64:POKE 53774,64:A=USR(1664)
HXJ 1460 POKE 559,0:POKE 1767,0:POKE 1768,0:TEXT$=CHR$(32):SETCOLOR 4,9,0
OTJ 1470 POKE 53248,0:POKE 53249,0
NFJ 1480 PRINT CHR$(125);:POSITION 0,0:PRINT M1$:POSITION 0,1:PRINT M2$
FBJ 1490 POKE 559,34:RETURN
GBJ 1500 FOR I=1 TO D:IF PEEK(764)=255 THEN NEXT I
CTJ 1510 RETURN
NSJ 1520 GOSUB 1450:POKE 559,0:PRINT CHR$(125);:POKE 623,0:POKE 764,255:CT=0
QHJ 1530 FOR I=1771 TO 1790:POKE I,10:NEXT I
UWJ 1540 POKE 1767,1:POKE 1768,8:POKE 1769,14:POKE 1770,14:POKE 1788,1
MLJ 1550 RESTORE 2780:FOR I=0 TO 31:READ N:POKE DL+1,N:NEXT I
DIJ 1560 POSITION 8,0:PRINT M3$;:POSITION 8,13:PRINT M4$
FAJ 1570 POKE 559,34:RETURN
LIJ 1580 SETCOLOR 4,9,0:POKE 704,144:POKE 705,144:POKE 53277,3:POKE 53248,48
JPJ 1590 POKE 53277,0:POKE 53261,255:POKE 53249,176:POKE 53262,255
KKJ 1600 POKE 53256,3:POKE 53257,3:RETURN
KUJ 1610 FOR I=1 TO LEN(TEXT$)
```

PACE continued on page 150

Applying The Atari
continued from page 147

Manager Additions appears on page 162 of December's column, and the continuation appears on page 66--confusion, confusion!

520 ST Newsletter

The Jackintosh Boston Users' Group is a part of The Boston Computer Society for Atari 520ST users and has sent me its latest newsletter for ST users. Their address: The Boston computer Society, Jackintosh User Group, One Center Plaza, Boston, MA 02108. Other groups: Let's see your newsletters--send them in to me.

PACE

Now it's time to enter PACE, the Personal Appointment Calendar & Editor. PACE will keep you in step with your latest plans and will remind you days in advance when important occasions, such as birthdays or exams, are approaching so you'll have time to prepare (i.e. buy and send out cards, or study). PACE can also provide you with a printout of your daily

continued on page 150

NOW AT THE SBC MART
COMPUTING SALE-A-THON

OUR BIGGEST SALE EVENT EVER!

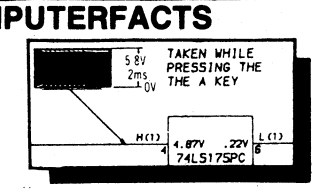
HARD DISK KITS

- complete 10MB Kit
- only **$410**

- Complete internal ½-hi 10MB kit, only **$410.**
- Same kit with low-power 3-½" drive, **$485.**
- 3-½" 10MB Winchester drive alone, **now $385.**

COMPUTERFACTS

- schematics
- waveforms
- troubleshooting techniques



Buy now and **get INTRODUCTORY PRICES.** Complete systems **$39** each: Apple IIc, IBM PC, TRS-80 I.

Components **$19** each: Apple II/II-Plus, IIe; Epson MX-80F/T, MX-100, FX-80, FX-100.

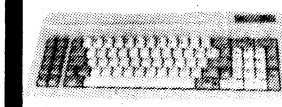
Over 40 more. Write for list.

SPECIAL BONUS Norton Utilities *Ver 3.0* Reg $90, **only $60** w/purchase of any disk drive.
IBM PC-DOS 3.1 (the real thing) Reg $65, **only $50** w/purchase of motherboard.

CASES

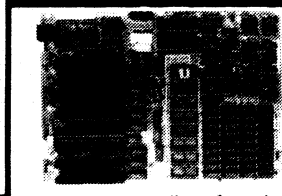
- IBM style, 5 or 8 slot Reg $95, **Sale $69.**

KEYBOARDS



- 5150 style Reg $125, on sale for **only $90.**

MOTHERBOARDS



- fully IBM PC compatible
- runs IBM's PC-DOS

These are excellent foundations for complete business, personal, and workbench/integration PCs.

- MB-1 256K motherboard, 8 exp slots, w/0K Reg $295, **now $220;** 256K **Sale $260.**
- MB-3 640K motherboard, 8 exp slots, w/0K Reg $399 **now $250;** 640K **Sale $325.**
- MB-2 640K motherboard, 4.77 *and* 7.6MHz clock 8 exp slots, w/256K Reg $449, **now $369.**

OUR PLEDGE

- technical support
- one-year warranty
- service after sale
- and low prices

LAST MINUTE ITEMS

NEC V20 CPU: increase the speed of your 8088 system 50 to 90% **$22**

RAM, 9-chip sets: ID-256 256K **$32/set**

DRIVES super quality: F-4 48tpi DSDD **$99**

5151 STYLE KEYBOARD: KB-4 keyboard **$119**

135W POWER SUPPLY: PS-135 side sw **$90**

SUPER SOFTWARE SPECIALS

- Microsoft Macro assembler **BEST PRICE $107,** BASIC interp Reg $340, **Sale $280.**
- Ellis/Utah COBOL or PASCAL compilers, or BASIC interpreter, **only $39** each.
- Open Systems Business BASIC interpreter, Reg $180, **Sale $155.**
- True Lattice C compiler Reg $475, **Sale $349.**

Complete system on sale **under $1,000.**

ADD-ON-CARDS SPECIALS

HDC-1 OMTI hard disk controler, up to 2 drives, with cables, super fast controller.....**$175**
MGC-2 hi-res TTL monochrome card Reg $130, **only $95;** CL-1 clk/cal w/battery, Reg $59 now.....**$56**
I/O-1 floppy disk controller, clock/cal, serial, parallel, and game ports, more.....**$145**
MFC-4 multifunction 384K RAM, clock/calendar, serial, parallel, w/0K $145, w/384K.....**$170**
SYS-3 COMPLETE SYSTEM: 256K RAM, keyboard, FDC-2, 2 F-4s, mono or color card.....**$999**

Shipping and handling: drives/motherboards/cases/power supplies $4.50 ea, cards $3 ea, software $2.50 ea, modems/keyboards $4 ea, COMPUTERFACTS $3 ea, memory/diskettes $1/set/box.
CA residents add 6% sales tax.

The SBC Mart

To order or for further information:
CALL (619) 375-5744
The SBC MART, P.O. Box 1296, Ridgecrest, CA 93555
The SBC MART is part of Computing Technology, 821-B Commercial Street, Ridgecrest, CA 93555

Applying The Atari

continued from page 149

schedule each day.

Since the program is over 300 lines long, you should be prepared to spend some time typing it in. It's a practical, user-friendly program, and it'll be worth the effort. PACE requires a minimum of 32K and will work with diskette system only. Since PACE takes advantage of the random-access capabilities of the disk drive, a cassette recorder cannot be used.

PACE program continued from page 149

```
GOJ 1620 TEXT$(I,I)=CHR$(ASC(TEXT$(I,I))+128):NEXT I:RETURN
TMJ 1630 POKE 85,(40-LEN(TEXT$))/2:PRINT TEXT$;:RETURN
TGJ 1640 TRAP 40000:CT=0
PVJ 1650 GET #1,K:IF PEEK(694)>0 THEN K=K-128:POKE 694,0
XIJ 1660 IF K>27 AND K<123 OR K=127 OR K=154 OR K=155 OR K=126 THEN 1840
LVJ 1670 IF K=16 THEN GOSUB 2650:GOTO 1920
YNJ 1680 IF K=254 THEN 1840
BWJ 1690 IF K<>157 THEN 1720
UNJ 1700 POKE 752,1:PRINT CHR$(K);:V=PEEK(84):POSITION 8,13:PRINT CHR$(156);
WQJ 1710 CT=CT+1:POKE 84,V:POKE 85,8:GOTO 1920
BSJ 1720 IF K<>156 THEN 1750
RCJ 1730 POKE 752,1:POKE 1787,4:PRINT CHR$(K);:V=PEEK(84):CT=CT+1
JQJ 1740 POSITION 8,12:PRINT CHR$(157);:POKE 1787,10:GOTO 1710
ICJ 1750 IF K=27 THEN RETURN
YQJ 1760 IF K<255 THEN 1790
GPJ 1770 PRINT CHR$(K);:H=PEEK(85):V=PEEK(84):POSITION 32,4:POKE 752,1
REJ 1780 PRINT IN$:POSITION H,V:GOTO 1850
WIJ 1790 IF K>10 THEN 1820
MHJ 1800 POKE 752,1:PRINT MSG$(K*24-23,K*24-PEEK(85)+8)
QEJ 1810 POKE 85,8:CT=5:GOTO 1850
WMJ 1820 SOUND 1,60,6,8:FOR I=1 TO 40:NEXT I:SOUND 1,0,0,0
FPJ 1830 GOTO 1650
NVJ 1840 CT=CT+1:POKE 752,1:PRINT CHR$(K);:IF K=156 OR K=157 THEN POKE 85,8
TEJ 1850 IF PEEK(85)>31 THEN POKE 85,8:POKE 84,PEEK(84)+1
AXJ 1860 IF PEEK(84)>12 THEN POKE 84,4
LJJ 1870 IF PEEK(85)>7 THEN 1910
RPJ 1880 IF K=126 THEN POKE 85,32:POKE 84,PEEK(84)-1:PRINT CHR$(K);:GOTO 1910
KZJ 1890 IF K=155 THEN POKE 85,8:GOTO 1910
ADJ 1900 POKE 85,31:POKE 84,PEEK(84)-1
ARJ 1910 IF PEEK(84)<4 THEN POKE 84,12
NXJ 1920 POKE 752,0:PRINT CHR$(31);CHR$(30);
FQJ 1930 GOTO 1650
GEJ 1940 CLOSE #2:E=PEEK(195)
BJJ 1950 IF E<>144 THEN 2060
XNJ 1960 POSITION 2,2:PRINT DEL$;"Diskette must be formatted."
OYJ 1970 POKE 752,0:PRINT "Want to format this diskette? ";:GOSUB 2460
UUJ 1980 IF N=78 THEN 200
HHJ 1990 POKE 752,1
GKJ 2000 PRINT MR$;"Press ";S$;" to format disk in drive ";DISK$(2,2)
IPJ 2010 TEXT$="OPTION":GOSUB 1610:PRINT "or press ";TEXT$;" to cancel."
XGJ 2020 A=PEEK(53279):IF A<>3 AND A<>6 THEN 2020
OPJ 2030 IF PEEK(53279)=3 THEN 200
YAJ 2040 PRINT "Formatting...";:XIO 253,#7,33,87,DISK$
BYJ 2050 POSITION 2,2:PRINT DEL$;"Formatting completed.":GOTO 2080
BGJ 2060 IF E<>170 THEN 2380
RRJ 2070 POSITION 2,2:PRINT DEL$;"No appointment file on this disk."
GYJ 2080 POKE 752,0:PRINT "Create an appointment file? ";:GOSUB 2460
UNJ 2090 IF N=78 THEN 200
TXJ 2100 POSITION 2,2:PRINT DEL$;"Enter your name.":INPUT #16;NAME$
TJJ 2110 PRINT MR$;"Enter the date (Example: 1/12/86).":INPUT #16;A$
LMJ 2120 TRAP 2110:FOR I=2 TO LEN(A$):IF A$(I,I)<>"/" THEN NEXT I
EQJ 2130 M=VAL(A$(1,I-1)):FOR J=I+2 TO LEN(A$):IF A$(J,J)<>"/" THEN NEXT J
VUJ 2140 D=VAL(A$(I+1,J-1)):Y=VAL(A$(J+1)):IF Y>99 THEN 2150
FQJ 2150 TRAP 40000:C=INT(MIN/100)*100:IF Y>=MIN-C THEN Y=Y+C:GOTO 2170
FAJ 2160 Y=Y+C+100
NNJ 2170 PRINT MR$;"Enter a password (RETURN for none).":INPUT #16;PW$
THJ 2180 SR=1:GOSUB 580
GLJ 2190 RESTORE 2760:FOR I=0 TO WD:READ A$:NEXT I:DATE$=A$
LFJ 2200 DATE$(LEN(DATE$)+1)=CHR$(44):DATE$(LEN(DATE$)+1)=CHR$(32)
HJJ 2210 DATE$(LEN(DATE$)+1)=MONTH$(M$3-2,M$3):DATE$(LEN(DATE$)+1)=CHR$(46)
KZJ 2220 DATE$(LEN(DATE$)+1)=CHR$(32):DATE$(LEN(DATE$)+1)=STR$(D)
LIJ 2230 DATE$(LEN(DATE$)+1)=CHR$(44):DATE$(LEN(DATE$)+1)=CHR$(32)
WHJ 2240 DATE$(LEN(DATE$)+1)=STR$(Y)
SBJ 2250 PRINT MR$;"NAME: ";NAME$:PRINT "DATE: ";DATE$
GNJ 2260 IF LEN(PW$) THEN PRINT "PASSWORD: ";PW$
GGJ 2270 IF LEN(PW$)=0 THEN PRINT "NO PASSWORD."
FTJ 2280 PRINT "Is all of the above correct? ";:GOSUB 2460
KTJ 2290 IF N=78 THEN GOTO 2100
RMJ 2300 PRINT "Saving this data..."
IOJ 2310 A$=DISK$:A$(LEN(A$)+1)="PACE.PNT"
JKJ 2320 OPEN #2,8,0,A$:PRINT #2;NAME$;CHR$(155);DATE$;CHR$(155);
SRJ 2330 PRINT #2;M;CHR$(155);D;CHR$(155);Y;CHR$(155);PW$
EZJ 2340 A$=CHR$(0):A$(122)=CHR$(0):A$(2)=A$
FHJ 2350 FOR I=1 TO 9:PRINT #2;A$:NEXT I:CLOSE #2
KDJ 2360 A$=DISK$:A$(LEN(A$)+1)="PACE.DAT":OPEN #2,8,0,A$:CLOSE #2:POKE 752,1
JYJ 2370 GOSUB 1450:POKE 85,4:PRINT "Appointment file has been made.":GOTO 220
PLJ 2380 TEXT$="ERROR #":TEXT$(LEN(TEXT$)+1)=STR$(E):GOSUB 1610:GOSUB 1630
NUJ 2390 TEXT$="START":GOSUB 1610:PRINT "Press ";TEXT$;" to start again."
TCJ 2400 IF PEEK(53279)<>6 THEN 2400
DEJ 2410 GOTO 200
YOJ 2420 DATA 17,18,18,18,5,17,18,18,5,17,18,18,18,18,5
QYJ 2430 DATA 124,32,32,32,124,124,32,32,124,124,32,32,32,32,124
YKJ 2440 DATA 26,18,18,18,3,26,18,18,3,26,18,18,18,18,3
VXJ 2450 DATA 19,17,18,18,18,5,27,124,32,32,32,124,35,26,18,18,18,3
IEJ 2460 H=PEEK(85)
ELJ 2470 POKE 694,0:POKE 702,64:GET #1,N:IF N>128 THEN N=N-128
KWJ 2480 IF N=78 THEN PRINT "NO":RETURN
OFJ 2490 IF N=89 THEN PRINT "YES":RETURN
YOJ 2500 PRINT
HPJ 2510 PRINT CHR$(156);CHR$(253);"Y OR N";CHR$(28);
LFJ 2520 POKE 85,H:PRINT CHR$(30);CHR$(31);:GOTO 2470
VNJ 2530 REC=SUM(M-1)+D:IF M>2 THEN REC=REC+1
KHJ 2540 SEC=ASC(HS$(REC,REC))*256+ASC(LS$(REC,REC))
POJ 2550 BYTE=ASC(BYTE$(REC,REC)):RETURN
JHJ 2560 I=40:DIM M1$(1),M2$(1),M3$(I),M4$(1)
RRJ 2570 TEXT$=CHR$(32)
XHJ 2580 TEXT$(LEN(TEXT$)+1)="Personal Appointment Calendar & Editor"
APJ 2590 TEXT$(LEN(TEXT$)+1)=CHR$(32):GOSUB 1610:M1$=TEXT$
LCJ 2600 TEXT$=SP$(1,7):TEXT$(LEN(TEXT$)+1)="Copyright 1986 Jeff Brenner"
YXJ 2610 TEXT$(LEN(TEXT$)+1)=SP$(1,6):GOSUB 1610:M2$=TEXT$
UIJ 2620 TEXT$="PACE APPOINTMENT DISPLAY":GOSUB 1610:M3$=TEXT$
UHJ 2630 TEXT$="PRESS CONTROL-P TO PRINT":GOSUB 1610:M4$=TEXT$
CYJ 2640 RETURN
NHJ 2650 TRAP 2680:OPEN #3,8,0,"P:":PRINT #3
CJJ 2660 FOR I=2 TO 12:POKE 842,13:POSITION 8,I:INPUT #16;A$:PRINT #3;A$:NEXT I
IPJ 2670 POSITION 8,4:PRINT #3:RETURN
QVJ 2680 CLOSE #3:TEXT$="PRINTER DOES NOT RESPOND":GOSUB 1610
CTJ 2690 H=PEEK(85):V=PEEK(84):POSITION 8,13:PRINT TEXT$
BJJ 2700 POKE 1788,14:SOUND 1,50,6,8:FOR I=1 TO 40:NEXT I:SOUND 1,0,0,0
YNJ 2710 POSITION H,V:PRINT CHR$(31);CHR$(30);
RAJ 2720 IF PEEK(764)=255 THEN 2720
AUJ 2730 POSITION 8,13:PRINT M4$:POKE 1788,1:POSITION H,V:RETURN
BHJ 2740 DATA JANUARY,31,FEBRUARY,28,MARCH,31,APRIL,30,MAY,31,JUNE,30,JULY,31
PRJ 2750 DATA AUGUST,31,SEPTEMBER,30,OCTOBER,31,NOVEMBER,30,DECEMBER,31
EMJ 2760 DATA SUNDAY,MONDAY,TUESDAY,WEDNESDAY,THURSDAY,FRIDAY,SATURDAY
BAJ 2770 DATA 0,31,59,90,120,151,181,212,243,273,304,334
MXJ 2780 DATA 240,112,112,194,64,156,130,112,130,130,112,130,128,130,128,130
LUJ 2790 DATA 128,130,128,130,128,130,128,130,128,130,128,130,130,65,32,156
SZJ 2800 GOSUB 1450:PRINT "Saving appointment data...":CLOSE #2
NDJ 2810 M=M2:D=D2:Y=Y2:WD=WD2
HIJ 2820 GOSUB 780:POKE 842,13:POSITION 8,4:INPUT #16;DATE$:POKE 842,12
PHJ 2830 A$=DISK$:A$(LEN(A$)+1)="PACE.PN1":OPEN #2,8,0,A$
EZJ 2840 PRINT #2;NAME$;CHR$(155);DATE$
SYJ 2850 PRINT #2;M;CHR$(155);D;CHR$(155);Y;CHR$(155);PW$
XTJ 2860 FOR I=0 TO 2:PRINT #2;LS$(I*122+1,I*122+122):NEXT I
XQJ 2870 FOR I=0 TO 2:PRINT #2;HS$(I*122+1,I*122+122):NEXT I
EOJ 2880 FOR I=0 TO 2:PRINT #2;BYTE$(I*122+1,I*122+122):NEXT I
NKJ 2890 CLOSE #2:PRINT "Run this program again? ";:GOSUB 2460
CNJ 2900 IF N=89 THEN GRAPHICS 0:RUN
UWJ 2910 GRAPHICS 0:END
SNJ 2920 REM MULTI-LUMINANCE SUBROUTINE
OJJ 2930 REM COPYRIGHT 1985 JEFF BRENNER
AOJ 2940 IF PEEK(1664)>0 THEN RETURN
XRJ 2950 RESTORE 3000:I=0
CLJ 2960 READ NUM:IF NUM=-1 THEN 2980
VHJ 2970 TOT=TOT+NUM+1:POKE 1664+I,NUM:I=I+1:GOTO 2960
VQJ 2980 IF TOT<>13108 THEN PRINT "ERROR-CHECK DATA LINES":STOP
GCJ 2990 A=USR(1664):RETURN
ROJ 3000 DATA 104,173,48,2,133,204,173,49,2,133,205,160,26,169,10
VMJ 3010 DATA 153,230,6,136,208,250,160,0,177,204,9,128,145,204,160
SHJ 3020 DATA 3,177,204,9,128,145,204,160,6,177,204,9,128,145,204
MHJ 3030 DATA 200,192,28,208,245,169,197,141,0,2,169,6,141,1,2
RVJ 3040 DATA 173,14,212,9,128,141,14,212,96,72,152,72,173,11,212
RHJ 3050 DATA 201,7,240,18,201,8,240,14,230,204,164,204,145,231,6
QHZ 3060 DATA 141,23,208,104,168,104,64,169,0,133,204,240,238,-1

[END OF LISTING]
```

Enter the program listed under the "Personal Appointment Calendar & Editor" heading and save it to diskette. Remember to use Program Perfect so you don't get stuck with inumerable typing errors.

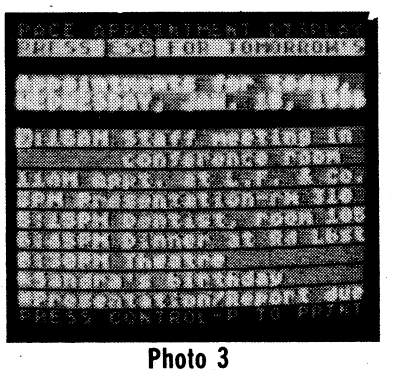


Photo 3

When you run the program, you'll be ased to "INSERT YOUR DATA DISKETTE." If you are using a single-density format, you'll need a separate blank diskette to store the data. If you're using dual-density format, you have room to store the data file and the program on the same diskette. If you place an unformatted diskette into the dirve, the program will format it for you if you answer Y to the "Want to format diskette?" prompt.

Next, PACE will create an appointment file on the data diskette. Type Y for the "Create an appointment file?" prompt and enter your name and today's date as directed. Then you will be asked to enter a password. Since this will be your personal appointment calendar, you may want to prevent others from peering at your plans. You can enter any password you want, or you can just press RETURN if you would rather not have a password. If you opt for the password, be sure it's one you'll remember!

You'll be given the opportunity to correct any errors and then will be brought to the main screen (see Photo 2).

This is the screen that you'll see each time you run the program. If you have chosen a password, you'll have to enter the password correctly before you can access this screen.

Your name is displayed along with the date that you last used PACE. The date in the center of the screen is used to display the current date. Since you just created a data file, the previous date and the current date will be the same. When you use PACE in the future, use the START, SELECT and OPTION keys to set the new date. The day of the week is automatically calculated by the program for any day of the year. You'll probably want to use PACE at least once a day to see your daily plans, upcoming plans, and to enter new appointments.

Photo 2

Press RETURN when the current date is set and the PACE Appointment Display is shown. This mini-screen is where your daily appointments are read. Since you have not yet entered any appointments, this screen will be blank, but Photo 3 shows what a typical schedule might look like. The asterisks denote important occasions that are to be brought to our attention days in advance, such as birthdays or deadlines. If you have a printer, CONTROL-P can be used at any time to print out the schedule on paper. You could also make changes on this screen at any time and they will be recorded on the diskette.

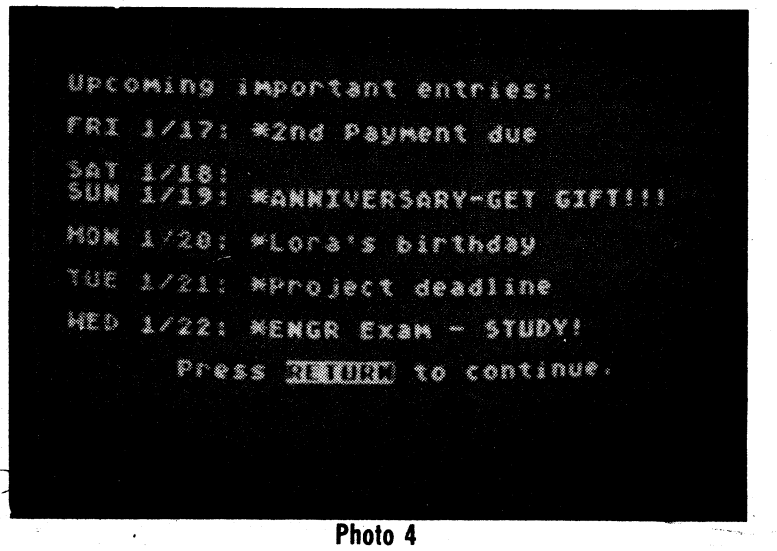


Photo 4

Pressing ESC will show you the following day's schedule. You can revise or print out this schedule too.

Another press of the ESC key brings you to the "Upcoming important entries" screen. Here the program gives you a look at important occasions (those that had been preceded by an asterisk) that are approaching within the next seven days (see Photo 4).

When you press RETURN, you are asked if you want to enter appointments. If you type Y for this prompt, you will be returned to the main screen where you will be asked to set the date for which you want to enter appointments. You will then be brought to the PACE Appointment Display where you can enter appointments for that date. You can type freely on the mini-screen as you choose, using the Atari's control and cursor keys for positioning and editing.

You can continue entering appointments for any number of future dates by answering Y each time to the "Add or change more appointments?" prompt.

When you're done, the program will take a few seconds to save its reference data to the data diskette and will give you the option of stopping or rerunning the program. Up to 366 days of schedules can be stored on a diskette.

Happy New Year to all readers, and may you never miss a dentist appointment, birthday, anniversary, studying for an exam, etc., again!

Next Month

We'll have more details on PACE and hopefully a Halley's Comet program, more reader mail and surprises too. Stay tuned.

Readers' questions, comments and contributions are welcome. Please enclose a self-addressed, stamped envelope for a personal reply.

A diskette of the programs listed in this month's column is available from the author for $7.00, postpaid. Please specify your disk drive model.

"Program Perfect" is utility used to check for typing errors while entering programs from this column. Readers may send $5.00 for a diskette of this program and documentation.

Address all correspondence to:

Jeff Brenner
"Applying The Atari 1/86"
c/o *Computer Shopper*
P.O. Box F
Titusville, FL 32781-9990 ●